THE BRITISH PTERIDOLOGICAL SOCIETY

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The BRITISH PTERIDOLOGICAL SOCIETY was founded in 1891 and today continues as a focus for fern enthusiasts. It provides a wide range of information about ferns through the medium of its publications and other literature. It also organises formal talks, informal discussions, field meetings, garden visits, plant exchanges, a spore exchange scheme and fern book sales. The Society has a wide membership that includes gardeners, nurserymen and botanists, both amateur and professional. The Society's journals, *The Fern Gazette*, *Pteridologist* and *Bulletin*, are published annually. *The Fern Gazette* publishes matter chiefly of specialist interest on international pteridology, the *Pteridologist*, topics of more general appeal, and the *Bulletin*, Society business and meetings reports. **WWW site**: http://www.eBPS.org.uk

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(**Front cover**: *Trichomanes speciosum.* Illustration from E. Newman (1844) *A History of British Ferns.*)

Back numbers of *The Fern Gazette*, *Pteridologist* and *Bulletin* are available for purchase from P.J. Acock, 13 Star Lane, St Mary Cray, Kent BR5 3LJ; E-mail: BackNumbers@eBPS.org.uk

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NATIONAL FIELD MEETINGS 2003

SOUTH-WEST IRELAND – 24-30 May

Blarney to Glengarriff, Co. Cork (Saturday) — Bryan Smith

Blarney Castle car park at midday on Saturday 24th May saw a large party of BPS members gather for the start of the south-west Ireland meeting. This proved to be a good place to meet since it gave some of us a chance to kiss the Blarney stone – a hazardous undertaking whichever way you look at it (be it dangling on your back, head first out of the castle parapet or kissing a slimy germ-infested rock!). Still, there was some *Asplenium ruta-muraria* and other calcicoles on the castle walls, and *Polypodium cambricum* was growing on the walls of the car park and elsewhere on walls around Blarney as well as *P. vulgare* and *P. interjectum*. But greater things were to come that week during what turned out to be a classic BPS trip – good ferns, good company and good food and drink.

From Blarney, we convoyed a short distance to Garrycloyne and were joined by some late arrivals for our search for *Asplenium onopteris*. We weren't disappointed and a roadside bank quickly gave us this species, *A. adiantum-nigrum* and the hybrid *A.* x *ticinense*. Within about 50 yards we also saw *A. trichomanes* subsp. *quadrivalens*, *A. scolopendrium*, *Dryopteris filix-mas*, *D. dilatata*, *Polypodium interjectum*, *Polystichum setiferum* and the inevitable *Pteridium aquilinum*. We'd parked in the entrance to St Mary's cemetery (10/6079), and a short detour to the church also gave us *Blechnum spicant* and *Dryopteris affinis* subspp. *affinis* and *borreri* on the sides of the track leading to it. On the mortared walls within the churchyard we then found *Asplenium ruta-muraria*, *A. trichomanes* subsp. *quadrivalens*, *A. scolopendrium* and *A. ceterach*.

Not content with 15 species thus far, we headed to a pond in Clogheenmilcon Sanctuary (10/6175) to see a lovely patch of red *Azolla filiculoides* with individual plants standing remarkably proud of the water, and *Equisetum arvense* on the side of the path leading to the pond.

Glengarriff, some fifty miles away in West Cork, was to be our base for the next two nights, but we were tempted even so to stop *en route* to see roadside 'outcrops' of ferns that added to our list *Athyrium filix-femina*, *Dryopteris* x *complexa* nothosubsp. *complexa*, and some *Osmunda regalis* in an adjacent field.

Although we were dispersed in various accommodation around Glengarriff, it wasn't long before we met up again in a town restaurant for some typically Irish fare.

Lough Hyne and Glengarriff Woods, Co. Cork (Sunday) — Alison Paul

We assembled on the front in Glengarriff and, now joined by Paul Ripley and Pat Acock, set off to drive in convoy via Bantry and Skibbereen to Lough Hyne (10/0928) on the south coast of Co. Cork. Lough Hyne is important as a Marine Nature Reserve, with limestone underlying the sea water. Its amazing diversity of life (over one thousand species of

animal/plant in less than one square kilometre) is attributed to the variety of habitats: cliffs, boulders, gravel and mud slopes, differences in exposure to the waves and a range of tidal currents. Peering into the clear water in between bouts of fern hunting, sea anemones and purple sea urchins were among the abundant sea-life visible.

Walking along the north side of the Lough, we passed stands of bracken and *Polystichum setiferum* at the roadside, and clumps of *Dryopteris affinis*. We were puzzled already – was it subsp. *affinis* or subsp. *cambrensis*, or neither of these? *Athyrium filix-femina* and *Asplenium adiantum-nigrum* grew at the base of the rocky slopes. On the wall around the Lough was more *A. adiantum-nigrum*, plus *A. ruta-muraria*, *A. trichomanes* subsp. *quadrivalens* and diminutive polypods, at least one of which was convincing *P. cambricum*. *Polystichum setiferum*, *Dryopteris filix-mas*, *D. dilatata*, *Asplenium scolopendrium*, *A. trichomanes* subsp. *quadrivalens* and *A. adiantum-nigrum* were recorded on the roadside banks.

The main reason for our visit to Lough Hyne was to see *Asplenium onopteris*, which used to be relatively common on roadside banks nearby. Unfortunately, the road appeared to have been widened and bramble growth had increased. We did, however, add *Blechnum spicant*, *Dryopteris aemula* and *D. affinis* subsp. *borreri* to our list, and there were beautiful croziers of subsp. *affinis*. *Lathyrus vernus* (spring pea) and a pink form of *Anthyllis vulneraria* (kidney vetch) added colourful interest to the site.

Roadside exploration in the opposite direction revealed more *Blechnum* and *Dryopteris aemula*, as well as an interesting *Asplenium*. It was not convincing as *A. onopteris*, but on the other hand it didn't match the *A. adiantum-nigrum* we had seen hitherto. Ken Trewren's study of spores/chromosome count later revealed that it was indeed *A. onopteris*.

Some of us picnicked beside the Lough, making the most of the beautiful setting before the long drive back to Glengarriff. *En route* we admired stands of *Osmunda regalis* along roadsides and field boundaries.

One of the most noteworthy features of Glengarriff Woods Nature Reserve was the midges; application of insect repellent was imperative. The area is well known for its saxifrages, including *Saxifraga spathularis* (St Patrick's cabbage), but we were more interested in the filmy ferns growing on the same rocks. At one site (00/919568), where *Hymenophyllum tunbrigense* was abundant and *H. wilsonii* was also present, Ken found putative hybrid fronds with the colour and habit of *H. wilsonii* but with toothed indusial valves. These are the subject of ongoing research.

We did the River Walk, a circular walk through the woods, which were predominantly sessile oak, with a lot of holly. *Dryopteris aemula* was abundant, and *D. affinis* subspp. *affinis* and *borreri*, *D. dilatata*, *D. filix-mas*, *Athyrium filix-femina*, *Pteridium aquilinum* and *Blechnum spicant* were all noted. A possible hybrid between *Dryopteris dilatata* and *D. aemula* was found by Ken. Later examination of sporangia revealed many abortive spores but unfortunately a chromosome count was not achieved; another sample is needed! *Polypodium interjectum* was common, both on rocks and as an epiphyte. *Osmunda regalis* grew near the bridge over the river. A few more colonies of *Hymenophyllum wilsonii* were found on rocks by the river, in some cases with *H. tunbrigense* growing above it. *Asplenium trichomanes* subsp. *quadrivalens* on the walls leading to a bridge near the car park completed our findings here.

After dinner in Glengarriff we decided to hunt for *Blechnum cordatum*, which *A Catalogue of Alien Plants in Ireland* (2002) cites as naturalised in the area in 1952-3 and 1977. The *B. cordatum* eluded us, but the wonderfully ferny lane (north from 00/946567) was home to *Athyrium filix-femina*, *Blechnum spicant*, *Dryopteris affinis*, *Pteridium aquilinum*, *Equisetum arvense*, *Dryopteris dilatata*, *D. aemula*, *D. filix-mas*, a large *Osmunda regalis*, *Asplenium scolopendrium*, *A. trichomanes* subsp. *quadrivalens*, *A. adiantum-nigrum*, *Polystichum setiferum* and *Polypodium interjectum*.

Healy Pass and Derreen Garden, Co. Kerry (Monday) **Patrick Acock**

As our leader's car exhaust was damaged, we left him seeking a repair shop while we made our way towards our second billet via the Healy Pass in the Caha Mountains. Just over the summit into Co. Kerry, we paused in a small lay-by (00/789545) to allow us to climb up a gentle slope where Michael Troy had been told marsh clubmoss (*Lycopodiella inundata*) had been found. It was fortunate that most of us had donned our wet weather gear, as the rain was driving down the slope. We did add *Oreopteris limbosperma* to our list for the week, but as we had promised not to be more than an hour we returned to the cars unsuccessful in our hunt for the clubmoss.

photo: B.D. Smith

Derreen Garden, Co. Kerry

Michael Troy, Ken Trewren, Christine Mullins, Sam Thomas, Alison Paul, Paul Ripley, Gill Smith, Pat Acock, Bryan Smith, Bridget Laue, Steve & Karen Munyard, Alan Ogden

We arrived at Derreen Garden just north of Lauragh (00/7758) around lunch-time and decided to dry off while sampling the tea and cakes. We were then taken around the garden by our host for the afternoon, the head gardener Jacky Ward. Jacky explained that his father had held the position before him and so the family had taken care of the garden for some considerable time. The sub-tropical, coastal garden has many rarities but it was for the filmy ferns and tree-ferns that we had come. We were not to be disappointed because the *Dicksonia antarctica* had been there for more than a century (since the 1860s) and the wooded valley was reminiscent of New Zealand with tree-ferns of all ages, including sporelings carpeting the ground. Up many of the trunks and over boulders were carpets of *Hymenophyllum tunbrigense* and occasionally *H. wilsonii*. There were other tree-ferns including *Dicksonia squarrosa*, *Cyathea dealbata* and *C. medullaris* but these had been planted more recently. Our host was very patient, never once complaining about our slow progress.

After another round of cake we made our way to the bottom end of Torc Waterfall (00/965847), south of Killarney. Our car arrived quite late and the rest of the group had already found most of the ferns we had come to see, though by looking through binoculars we did add *Trichomanes speciosum*, high up in an inaccessible place. The gametophyte was

more easily visible close to the path. We also saw large quantities of *Dryopteris aemula* and *Hymenophyllum tunbrigense* along with most common ferns of the region.

photo: A.M. Paul

***Dicksonia antarctica* – mature plants and sporelings at Derreen Garden**

We dispersed to our various lodgings and later met up for dinner at 'White Sands', the house where most of the party were staying and which was to become our unofficial HQ for the next five days. Here we enjoyed a wonderful meal prepared by Karen Munyard and Gill Smith and chatted in splendid comfort until quite late.

O'Sullivan's Cascade, Killarney (Tuesday) **Alan Ogden**

The party assembled at a road junction near Killarney at 10.00a.m. to drive a short distance to the beginning of a walk along a track to O'Sullivan's Cascade on the north-west side of Lough Leane. We parked our cars by a farm track and stream (00/896902) where there was already a lush assemblage of ferns: *Osmunda regalis*, *Dryopteris aemula*, *D. dilatata*, *D. filix-mas*, *D. affinis* subspp. *affinis* and *borreri*, *Athyrium filix-femina*, *Blechnum spicant*, *Polypodium interjectum* and the ubiquitous *Pteridium aquilinum*. *Equisetum telmateia* had also been spotted by the roadside. We continued to see specimens of most of these ferns as we walked about 2.5 miles to the cascade (00/915884).

The track passed through an area where large moss-clad boulders covered the ground beneath large holly trees, making a surreal scene. Many of the boulders were also covered in mats of filmy fern, mainly *Hymenophyllum tunbrigense* though we did find smaller quantities of *H. wilsonii*. There were remains of a row of buildings made of rocks and swathed in moss, too decayed to guess at their purpose. It was hard to imagine people finding a living in this wet, rocky place. Gametophytes of *Trichomanes speciosum* were found in a dark dripping cavity, raising hopes of finding the sporophyte by the cascade.

Walking down a very long flight of giant steps we came to the shore of the lough where the boulders formed a suitable place for us to have lunch. Some people can't sit still for long and Steve soon found quills of *Isoetes* floating near the shore and *Equisetum arvense* growing in the shingle. Some of the mossy boulders supported small colonies of *Polypodium vulgare* and a single plant of *Osmunda regalis* was seen. There was evidence of recent activity of large deer in the woods.

After lunch the cascade was explored enthusiastically, indeed, Steve took a tumble into a large bramble patch from which he was painfully extracted. Sadly, the Killarney fern was

not found although the gametophytes were identified once more, Ken Trewren being an expert in this arcane art. A polypody on an oak tree was thought to be *P. cambricum* and this was subsequently verified.

Some of us wearily headed for home via Kate Kearney's Cottage, a hostelry supplying tea and scones, whilst the more hardy fern hunters went on to try and find pillwort. Again no success, as they failed to penetrate the conifer plantations and *Rhododendron* thickets to get down to the lake, though they did find greater butterwort (*Pinguicula grandiflora*), New Zealand willowherb (*Epilobium pedunculare* var. *brunnescens*) and sundew (*Drosera rotundifolia*).

We were again invited back to White Sands for a delicious supper cooked by Gill and Karen and afterwards a special treat – a visit to the lakeside to see the Natterjack toads, which were croaking love songs by the lakeside among the *Equisetum fluviatile*.

Ross Island and Torc Waterfall (Wednesday) **Sam Thomas & Alan Ogden**

Ross Island in Killarney National Park was our first destination. Leaving the cars in the visitors' car park (00/950888) we walked to the castle, seeing plants of *Asplenium scolopendrium*, *A. ruta-muraria*, *A. trichomanes* subsp. *quadrivalens* and *Polypodium cambricum* on the walls. We then walked through delightful woodland towards Library Point on the opposite side of the lough to where we had been the previous day.

photo: A.M. Paul

Discussing *Dryopteris affinis* on Ross Island

Sam Thomas, Pat Acock, Paul Ripley, Steve Munyard & Ken Trewren

We passed a small area of willow and alder carr where we found *Dryopteris carthusiana*, *D. dilatata*, *Athyrium filix-femina* and *Equisetum arvense*. The woods were rich in ferns and we soon recorded *Pteridium aquilinum*, *Dryopteris affinis* subspp. *affinis* and *borreri*, *D. filix-mas*, *Polystichum setiferum* and more *Asplenium scolopendrium*. Ken thought he found *D.* x *complexa*, but a subsequent chromosome count put it in the *borreri* group (triploid). A ruined cottage revealed no new ferns, though it was roofed by a large tree in an extraordinary balancing act. We passed luxuriant specimens of *Osmunda regalis* (called Emperor fern by the Irish), *Polypodium vulgare*, *Blechnum spicant*, *Equisetum arvense*, *E. fluviatile* and *E.* x *litorale* before coming to the object of our walk: *Thelypteris palustris*. This was growing in a boggy area with *Osmunda regalis*. *Polypodium interjectum* was seen growing on many horizontal mossy branches. Other plants were noted, including a number of species of orchids: early purple, common spotted, common twayblade, bird's-nest orchids and a helleborine.

We returned to Ross Castle for lunch before setting off for the Old Kenmare Road above Torc Waterfall in search of the *Polystichum lonchitis* previously recorded there. From the car *en route*, *Asplenium ceterach* was seen growing on roadside walls. The cars were left at a large car park at the head of the waterfall (00/967841) and we set off along the Old Kenmare Road. The rocks on either side of the track were covered in vast quantities of filmy ferns, mostly *Hymenophyllum tunbrigense* and the usual woodland ferns were seen. An addition to our finds for the day was *Asplenium adiantum-nigrum*. We found a number of plants of *Polystichum aculeatum* by dripping rocks exactly as described in the old record and we surmised that the record for *P. lonchitis* had probably been an error and was in fact immature *P. aculeatum*. Under pine trees nearby was a colony of lesser twayblade found by Christine Mullins. We again searched around Torc Waterfall for Killarney fern and located eleven colonies, some of which appeared to be on the increase. With great daring most of us made the crossing of the torrent, balancing on huge boulders to see the fern growing on the opposite side from the path.

photo: A.H. Ogden

Karen Munyard, Gill & Bryan Smith & Bridget Laue at Torc

Another short drive took us to a tunnel through the rocks by Upper Lake (00/919821), where Alison had previously found *Asplenium onopteris* and *A.* x *ticinense*. Bryan found both growing on a rock-face behind brambles.

This completed the day's ferning and we headed back to our accommodation and met again later for a splendid meal at The Fishery Restaurant in Killorglin.

Dingle Peninsula (Thursday) **Paul Ripley**

Shortly after leaving our base we stopped at Killorglin Bridge. A very nicely crenate *Asplenium ceterach*, *A. ruta-muraria*, *A. scolopendrium*, *A. trichomanes* subsp. *quadrivalens* and *Polypodium vulgare* agg. were growing on the walls. We also admired the statue of King Puck. A three day fair is held at Killorglin every year and at 'the gathering' a goat is brought down from the mountains and crowned King Puck until 'the dispersal' on the last day.

We stopped for an hour in the attractive town of Dingle, near the base of the peninsula of that name. Bookshops in the town were disappointing but we did see *Polypodium cambricum* on the walls. The roads towards Ventry were interesting for well grown plants of *Dicksonia antarctica* (01/420003) but we also saw *Polypodium interjectum*, *Athyrium filix-femina*, *Polystichum setiferum*, *Dryopteris affinis*, *D. filix-mas* and *Pteridium aquilinum*, as well as a crisped form of *Asplenium scolopendrium*.

Connor Pass links the south and north of Dingle peninsula and we stopped near the summit in excellent weather to have lunch. *Isoetes lacustris* grows in the clear waters of the lake (01/504059), but we also found *Asplenium ceterach*, A. *trichomanes*, *Polypodium vulgare*,

P. interjectum, *Dryopteris aemula*, *D. affinis* subsp. *affinis*, *D. dilatata*, *Athyrium filix-femina*, *Blechnum spicant* and *Huperzia selago*, in addition to the two filmies *Hymenophyllum tunbrigense* and *H. wilsonii*.

Our next stop was Brandon Point (01/527173), magnificent cliffs where choughs and other sea birds wheeled away below us. We saw *Asplenium marinum* here, as well as stunted *Dryopteris dilatata*, *D. aemula*, and *Athyrium filix-femina* growing in the short cliff grass. *Polypodium vulgare* grew in the dry-stone walls.

After mending a puncture caused by a slightly too close encounter of the stone wall kind we joined the rest of the group to explore a lane three miles further south (01/520127). The roadside verges were fascinating; almost any one could have been explored in depth. *Athyrium filix-femina*, *Dryopteris filix-mas*, *Polystichum setiferum*, *Asplenium scolopendrium*, *A. trichomanes* and *Pteridium aquilinum* were common but we also spent some time examining an unusual *Asplenium adiantum-nigrum* that might have been *A. onopteris* or even *A.* x *ticinense*; it turned out to be the hybrid. We also saw *Dryopteris affinis* subsp. *borreri* and different forms of subsp. *affinis*, one of which had 'cut-off' and very congested pinnae, very scaly, rather narrow fronds and well developed triangular basal pinnules with a prominent lobe at the base and might have been var. *kerryensis*. It is worth noting that during the week several forms of *D. affinis* were seen that did not appear to fit any of the hitherto described entities. Stephen had given us yet another excellent day in this botanically rich and varied country.

Valentia (Valencia) Island (Friday) **Bridget Laue**

The party met five miles west of Killorglin, travelling on the Ring of Kerry road to the Valentia Island ferry to Knight's Town. We were fortunate to have a display of gannets and cormorants diving for fish alongside the ferry during the crossing. Once on Valentia Island we drove the short distance to Glanleam sub-tropical gardens (00/404773).

The gardens, which have Dingle Bay running along their north-east edge, were planted in Victorian times and have a wonderful selection of Southern Hemisphere plants including many fern species. The garden is quite overgrown in places and gives a wonderful impression of being out in the wild. The following list gives the species we found but there were probably others hidden from view. Native species were *Polystichum setiferum*, *P. aculeatum*, *Dryopteris dilatata*, *D. affinis*, *D. aemula*, *Blechnum spicant*, *Athyrium filix-femina*, *Asplenium scolopendrium*, *A. trichomanes* subsp. *quadrivalens*, *Polypodium interjectum* and *Equisetum arvense*. Foreign species were *Blechnum chilense*, *B. nudum*, *Polystichum munitum*, *P. polyblepharum*, *Paesia scaberula*, *Todea barbara*, *Selaginella kraussiana*, *Phymatosorus diversifolius*, *Matteuccia struthiopteris*, and a fine stand of *Woodwardia radicans* spreading well by bulbils. Tree-ferns were represented by *Dicksonia antarctica*, *D. squarrosa*, *Cyathea brownii*, *C. medullaris* and *C. dealbata*.

Jim and Val Dennison, members from Limerick, joined us midway through the morning. A delicious lunch was taken in the wonderful dining room of Glanleam House.

In the afternoon we looked at a derelict part of the garden where bamboos and tree-ferns thrived and many colonies of *Hymenophyllum tunbrigense* were seen. Interestingly, there were also naturalised populations of *Woodwardia radicans* and *Polystichum polyblepharum*.

Some of us travelled to the nursery at Kells House on the south side of Dingle Bay. The grounds of the house are private but the owner allowed us to view more magnificent dicksonias planted in Victorian times. A number of interesting ferns and flowering plants were purchased before heading back to the accommodation.

Many thanks are due to Steve for a superbly organised and most enjoyable meeting during which we saw a great variety of pteridophytes in a range of wild habitats and amazing gardens. Thanks too to Karen and Gill for admirably demonstrating their catering skills!

MACHYNLLETH, MID-WALES – 21-23 June

Martin Rickard

Around 25 members gathered in Machynlleth on the Friday night in an area somewhat overlooked by our Society excursions in the past. Devil's Bridge to the south and more particularly Snowdonia to the north have often been visited but this area seems to have been passed over. Our past President, Barry Thomas, lives locally and he agreed to put matters right by leading this meeting – as it turned out one of the most rewarding I have ever attended.

On Saturday morning we were led around lowland lanes in the Eglwysfach and Furnace area (22/6895). No great rarities were seen, but *Polypodium vulgare*, *P. interjectum* and their hybrid, *P.* x *mantoniae*, were recorded and discussed at length, as were the weekend's first plants of the *Dryopteris affinis* group. We recorded *D. affinis* subspp. *cambrensis*, *borreri* and *affinis*, plus the hybrid *D.* x *complexa*. Other ferns seen included *D. dilatata*, *Athyrium filix-femina*, *Asplenium trichomanes* subsp. *quadrivalens* and *Blechnum spicant* – overall 15 different taxa. Mid-morning, Barry and Lynda Thomas gave us very welcome coffee in their garden where many good ferns were seen, with the highlight for me being *Asplenium scolopendrium* 'Crispum speciosum', originating from the garden of another past President, Henry Schollick.

photo: A.M. Paul

Barry Thomas' garden, Eglwysfach, Machynlleth

Matt Stribley, Barry Colville, Martin Rickard, Joy Neal

Suitably refreshed we set off into Cwm Einion (22/6994) in the foothills of Plynlimon, less than a mile from our morning walk. Here we recorded many additional species, most notably *Dryopteris aemula*, *Oreopteris limbosperma*, *Hymenophyllum tunbrigense* by a waterfall and in more open woodland *H. wilsonii*, *Phegopteris connectilis*, *Blechnum spicant* and some additional types of *D. affinis*, i.e. subsp. *affinis* var. *paleaceolobata*, plus a very dark-scaled form of subsp. *affinis*, and subsp. *borreri* 'morphotype *insolens*'. Then it was time for lunch, having already recorded 23 different taxa!

After lunch we visited the seaside, or rather the dunes at Ynyslas (22/6094). There was a good collection of equisetums here, including *E.* x *litorale* and *E. variegatum* (very small and difficult to spot at first, but then seen to be abundant), but most notably several good stands of *Ophioglossum vulgatum*. *O. azoricum* is recorded from further up the coast, but it is not known here nor could we find it. *Polypodium interjectum* was growing on the dunes, although the numerous orchids side-tracked some of the party.

Moving on we visited a long straight dyke near the village of Taliesin (22/6591). Here we were delighted to add *Dryopteris carthusiana*, *D. dilatata*, their hybrid *D.* x *deweveri* and *Osmunda regalis* to our species list. The osmundas were numerous and one or two plants were over six feet tall, but further into the bog we were assured plants up to ten feet tall could be found.

photo: B.D. Smith

Joy & Stewart Neal's house, near Eglwysfach, Machynlleth

Barry Thomas, Alison Paul, Christine Mullins, Pat Acock, Jennifer Walls, Ann Colville, Robin Walls, Sam Thomas, Martin Rickard, Graham Ackers, Bruce Brown, Sandy Strang, Joy & Stewart Neal, Matt Stribley, Barbara Porter, Gill Smith, Barry Colville, Bryan Smith, Jonathan Crowe, Robert Sykes, Ken Trewren

Next on the agenda was one of the weekend's highlights. We had all been invited to have a cream tea in Joy and Stewart Neal's garden just north of Eglwysfach (22/6996). Joy has amassed a large fern collection, which has been planted alongside her own private rocky ravine. Many interesting ferns grow here including several interesting cultivars of *Polystichum setiferum*. The star of her fern walk is, however, an uninvited guest – none other than a small patch of the gametophyte of *Trichomanes speciosum*! Elsewhere in the garden ferns are less numerous but it is a wonderful garden, a real tribute to Joy and Stewart.

Saturday closed with a very enjoyable session of short slide-shows after dinner. Not a bad day – two good gardens, a cream tea and 32 different taxa of ferns and fern allies seen growing in the wild.

On Sunday we headed off higher into the hills to meet Arthur Chater at the old lead and copper mines east of Tal-y-Bont near Esgair Hir and Esgair Fraith at about 1,500 feet above sea level (22/7291 to 7391). This area of Cardiganshire was always considered to be 'monotonous and unattractive' by the old botanists (see *Flora of Cardigan* by J.H. Salter, 1935), and the spot where we parked our cars was anything but promising – not a single fern in sight, not even bracken! Arthur is Vice-county Recorder for the Botanical Society of the British Isles and knows the area very well; I hoped he could prove the older botanists wrong. In fact, we soon realised we were in for a treat but space does not allow me to do the exploration of this area justice. Guided by Arthur we saw a remarkable 31 pteridophyte taxa here. By some old mine buildings were *Ophioglossum vulgatum*, *Botrychium lunaria* and *Dryopteris oreades*, while on old walls and shafts we added *Asplenium scolopendrium* and *A. viride*, the latter apparently found nowhere else in Cardiganshire. By the side of a stream on disturbed ground was a wonderful patch of *Equisetum* x *dycei* – a poignant record for those of us who still have many memories of happy times in the field with the late Jimmy Dyce. In a boggy copse was *Dryopteris carthusiana* and *D. dilatata*, possibly with the hybrid *D.* x *deweveri* and nearby on spoil heaps were *Lycopodium clavatum*, *Huperzia selago* and *Diphasiastrum alpinum*. Finally, in a small quarry nearby were two plants of *Cryptogramma crispa* – another rare fern in this county. The reason for the great diversity in the pteridophytes here is apparently the mines. Over the centuries different soil types have been exposed, including sufficient lime in places for strongly calcicolous species.

photo A.M. Paul

Arthur Chater explains the distinguishing features of various *Dryopteris* species

After a picnic lunch we moved off to a nearby wheel pit where we saw *Polystichum setiferum*, *P. aculeatum* and their hybrid *P.* x *bicknellii*, then on to the nearby lake, Llyn Nantycagl (22/7290 to 7390), some of us via more abandoned buildings to see *Cystopteris fragilis*. We paddled and found *Isoetes lacustris* and probably *I. echinospora*, as well as the somewhat larger hybrid with variably sized megaspores. At this point the party broke up. In this small, apparently inhospitable area we had beaten the Saturday tally of taxa seen, with 34 recorded.

The grand total for the weekend was 51 different ferns and fern allies. Many thanks to Barry and Arthur for guiding us, to Barbara Porter for keeping track of what we saw, to the Neals and Thomases for their hospitality, and finally to Pat Acock for organising such a superb meeting.

SEATTLE, WASHINGTON STATE, USA – 15-25 July

Introduction — Pat Acock

Sue and Harry Olsen first suggested the idea of this trip to Martin Rickard in the 1980s. It was somehow put off in the busy scheduling of the Society until Sue and Harry were visiting the UK in 1999. Matt Busby wanted an illustrated talk to go with the annual fern show at Warwick and Sue and Harry agreed to travel down the M6 from The Lake District and they gave a memorable lecture on 'The Best of the West'. This, and Alan Ogden's frequent illustrated talks on the New World, whetted appetites for such a meeting.

It was sad that at the earliest process of planning Harry should have been so tragically taken from us. It was with our very grateful thanks that Sue agreed to continue the planning and it is a testimony to her great courage and fortitude that we could embark on such a unique and excellently planned foray.

Miller Botanical Garden, Seattle (Tuesday) — Pat Acock

Many of us met over breakfast and planned various ways to spend the morning before meeting together at 1pm. At this time we informally met with our host, Sue Olsen, and a number of her Hardy Fern Foundation colleagues who were to lead the various elements of The Tour. We were handed an enormous file assembled by Michelle Bundy, full of useful information and details so that we could prepare ourselves for each day.

At 3.30 we left in a range of 'people carriers' for The Miller Botanical Garden. Sue had done well to secure this trip for the party as the garden limits the total number of visitors each year. Richie Steffen, who oversees the garden and library, gave us a brief history of how Elisabeth Miller set up this garden just north of the Seattle City Limits on a bluff above Puget Sound. She cleared some of the native conifers and gradually established collections of hollies, ericaceous plants and ferns. Self-taught, she started to experiment with new plants, displaying them and eventually sharing information with others. This has been the focus of the garden ever since she died and left it to be run by a charitable trust. I was especially interested in the large *Metasequoia glyptostroboides*, which was one of the first planted in the west. Ferns included many hardy species and a number of British cultivars; one of my favourites was a large *Dryopteris* x *complexa*.

In the evening we dined at the water's edge in Ivar's Salmon House on the local speciality, smoked salmon. Here we were officially welcomed and were able to really get to know each other in a relaxing situation. Following dinner, Bors Vesterby gave us a lecture on an exciting project he is developing on a digital photographic key to the native ferns of the USA.

Field Trip to Perry Creek (Wednesday) — Graham Ackers

Our destination required a journey of over 45 miles north-east of Seattle into the Cascade Mountains. Perry Creek is a steep-sided valley of Andesite rock dominated by conifers – mainly western red cedar (*Thuja plicata*) and western hemlock (*Tsuga heterophylla*). The trail was a steadily increasing climb high above the creek, initially through quite dense forest, then passing through more open areas and screes, which were better for ferns. We eventually arrived at a waterfall two miles along the trail.

A large stand of *Blechnum spicant* adorned the forested trail at the start of our walk, but quickly diminished to become rare along the rest of the trail. The dominant fern along most of the trail was *Athyrium filix-femina* var. *cyclosorum*, which tended to be morphologically variable, in some instances having lush fronds of five feet or more. Other common ferns all the way were the ubiquitous *Polystichum munitum*, and *Adiantum aleuticum*, a beautiful fern for me to see in its natural habitat for the first time after many years of growing it. Slightly less common, but frequent along the trail, were *Pteridium aquilinum* var. *pubescens*, *Cystopteris fragilis*, *Gymnocarpium disjunctum*, looking to the untrained eye just like *G. dryopteris*, and *Polystichum andersonii*, a beautiful fern with larger fronds than

I can grow! Other ferns were either rare or restricted to particular habitats. The liquorice fern (*Polypodium glycyrrhiza*) was frequent on both rock and trees. Somewhat rarer and restricted to rock were small stands of *Polypodium amorphum*.

Gigantic ancient rock-falls had created several screes of moss-covered boulders, which were the habitat of *Cryptogramma acrostichoides* and *Asplenium trichomanes*. Other less common trailside ferns were *Dryopteris expansa* (identification taken on faith by me), *D. filix-mas* with sori seeming more marginal than in the British taxon, *Polystichum lonchitis*, always a beautiful fern, *Huperzia chinensis*, *Lycopodium clavatum* (only seen in the car park!), *Botrychium multifidum*, *B. virginianum* (very handsome), *Selaginella wallacei* and *Phegopteris connectilis*.

Although not central to our purpose, it was a delight to see also many flowering plants, most notably *Angelica genuflexa*, the very beautiful *Aquilegia formosa*, *Campanula rotundifolia*, *Clintonia uniflora*, *Heracleum lanatum*, *Lilium columbianum*, *Sambucus racemosa*, *Smilacina racemosa*, *S. stellata* and *Trillium ovatum* – in seed.

Perry Creek is in the Mount Baker Snoqualine National Forest and has been designated a Research Natural Area, roughly equivalent to our Site of Special Scientific Interest – not hard to see why, on account of its botanical diversity. It is also very beautiful, affording splendid mountainside views along the trail, with views back to the Big Four Mountain on the far side of the Stillaguamish River valley into which Perry Creek drains. And the waterfall at the far end of our walk was rather spectacular, if hard work to reach, even if only a two-mile hike! This was an excellent introduction to the wilderness habitats of the Northwest – thanks to Bors Vesterby and Richie Steffen for so efficiently and expertly leading a most enjoyable foray.

Private Gardens in Seattle and Bellevue (Thursday) **Margaret Scott**

This day was a delightful treat. The weather, the gardens, and the hospitality that each of the hosts and hostesses showed us was super. Each of the four gardens visited had its own grand entrance to a wonderful collection of lush and in many cases huge specimens of many beautiful plants. I was quite taken by the six-foot high tree-ferns as well as the beautiful landscaping.

The entrance to Sylvia Duryee's Seattle garden was a grand English holly hedge, at least 12 feet high with a 15-foot arch over a lovely garden gate. A curved stone and brick walk took us around the garden in front of her house where she introduced us to a number of her special plants. The *Athyrium filix-femina* 'Bornholmiense' attracted our attention, as did the *Blechnum cordatum* and *B. spicant*. These gardens had been artistically designed to show a combination of shrubs, trees, flowers, ferns and ground cover plants. Her *Dicksonia fibrosa*, as well as her *Dryopteris dilatata* 'Jimmy Dyce', particularly captured our attention. The collection was set off with a grand collection of driftwood that she and her husband had collected on their many trips to the bay and up the pacific coast. A shaded patio garden was bordered with ferns and peonies, and a nicely sculptured pine overlooked her grand garden. In the back was a wonderful large potting shed housing her huge collection of driftwood as well as her materials for planting.

Sue Olsen greeted and welcomed us to her hillside garden in Bellevue. Sue and her husband started the gardens in 1961. The plants along the hilly front drive included *Dryopteris championii*, *Athyrium otophorum*, dwarf *Dryopteris erythrosora* and a fern-leaf Japanese maple, as well as a variety of other ferns, hostas, azaleas and Japanese maples. At the entrance to the house, the garden featured a beautiful collection of ferns including *Dryopteris lepidopoda* and *Polypodium scouleri*. Many planters and pots were effectively used, especially around the carport and back patio areas. Noteworthy is Sue's ability to grow *Botrychium multifidum* in a large planter. As she said, every inch of ground has a purpose. At the back of the carport was a lath-house – fern house (with a glass window complete with a fern etching) where the young ferns live. We followed a mulched path through the fern and rock garden, which included some beautiful Himalayan maidenhair ferns (*Adiantum venustum*) and an east coast fern display. On various levels, Sue has over 200 varieties of ferns and 250 cultivars of Japanese maples. Also of interest were a hardening area, constructed with arched aluminium

photo: Kristi Olsen

Jennifer Ide, Robert Sykes, Martin Rickard & Sue Olsen in Sue Olsen's garden, Bellevue, USA

beams from Boeing surplus on the upper level, and a large propagation room in the lower level of her house.

After lunch at a Mexican restaurant, our next stop was Lan Bradner's garden in Bellevue. We entered via the front drive at a wonderful gate and fence, hand-crafted in metal and cast glass, on a bamboo theme. The garden had two distinct levels, each area based around a flagstone patio with plants generously growing around it. The lower patio had an interesting collection of plant material including large ferns, *Chamaecyparis* and flowers including *Impatiens*, liriopes, hostas, azaleas, fuchsias, and purple-leaved *Oxalis*. At the far end was a patio table with a vase of red zinnias. Along the side of the property a fence set off the Japanese maples, ferns and hostas. The upper level included a spread of *Adiantum venustum*, and a western maidenhair (*Adiantum aleuticum*) draped down behind the patio table and chairs. A lovely feature on the upper level was a cascading waterfall with Japanese garden accents. Very large ferns such as the English male fern, a tree-fern and *Dryopteris affinis* 'Cristata' particularly attracted our attention. We thank Lan Bradner for designing our wonderful T-shirts, for the colour prints of her garden, recipe and treats.

The fourth garden of the day was Pat and Marilyn Kennar's, also in Bellevue, where we were welcomed through an arbour with a wooden gate. On the stone entrance patio was a fountain and an assortment of ferns and hostas. Many of the Japanese maples as well as other plants were in ceramic pots. Garden features included birdhouses, a birdcage, frogs and other whimsical additions. The *Woodwardia* in the inner garden attracted particular attention. The back of the house sported a large deck overlooking the large garden. Pat's wood featured large conifers as the base for his woodland garden. His spectacular plants included huge ferns and hostas, particularly *Dryopteris* and polystichums of many varieties. Marilyn's perennial border, featuring lilies, phlox and daisies, created a nice balance of texture and colour. The plant collection sports over 100 Japanese maple cultivars, 150-200 varieties of hardy ferns and 100 hosta varieties.

Ridge Farm, Kenmore & Henry's Plant Farm, Snohomish (Friday) **Rose Marie Schieber**

Ilga Jansons met us at the foot of her steep driveway and, walking backwards up the hill, she introduced us to the elegant hillside garden and home in Kenmore that she shares with her husband, Michael Dryfoos. In just seven years they had literally established a woodland paradise with an Indonesian motif. The garden includes a network of wooded trails and stone paths on challenging topography. One came upon a tree-house used for meditation, moon watching and sleeping, water features, garden whimsy from Thailand and Indonesia, statuary, haiku verse in numerous appropriate locations, and flowers, ferns, and shrubbery growing beneath the tall western red cedars, Douglas firs, and big-leaf maples. Ilga invited us to partake of a fish 'kiss' at the pond's edge. One encircles a bit of fish food in one's palm and lower the palm into the water. The Koi carp, most about two feet long, approach and just nuzzle at the food source and swim quickly away. From a list of their plants, we learned that they have over 3,000 varieties, including 27 species of ferns. It truly felt as if you were walking through an Indonesian garden.

At Henry's Plant Farm, Snohomish, we were arranged in three groups of six or seven to tour the greenhouses. Henry's began as a small fern nursery 30 or 40 years ago and gradually evolved to a full-scale nursery specialising in ferns and a wide variety of other plants. We were escorted through the 'start-up' houses, where spores germinated and grew into prothalli, then into the next greenhouse where the sporelings were growing, and finally to the 'finished product' sheds where plants were made ready for market. Our particular group was led by the sales manager, so he was primarily interested in how long it took to grow a plant from spore to mature fern (18 to 36 months). In one greenhouse the space was taken up by hundreds of large pots of caladiums planted with maidenhair fern at their base, ready for shipment by air-freight or FedEx to the Wal-Marts and K-Marts of the world.

We were then treated to a delightful lunch by Henry's Plant Farm and were able to continue our discussions with the staff about the many aspects of fern horticulture that intrigued us.

At Leavenworth in the evening Martin Rickard reminded me on our way to dinner that I was still 'on duty', as the group passed by *Equisetum hyemale* subsp. *affine* growing alongside the sidewalk. So, of course, I have to mention it. What a great day, with a wonderful group!

North fork of Teanaway River, Wenatchee Mountains (Saturday) **Jennifer Ide**

The flora of the upper Teanaway River is determined by the serpentinite soils of the area. These soils are not only infertile, but the very high magnesium level in particular, and also the high levels of chromium, cobalt and nickel are toxic to plants. This reduces the competition between plants, and allows only those tolerant of the high magnesium and the heavy metals to colonise the soils. Compounding the mineral-based infertility, these soils are mixed with rocks and contain little organic matter, and consequently they have a low water-holding capacity and are powdery dry. With time, due to their isolation, endemics evolve on these inhospitable soils, but the species diversity is always low. At Teanaway, the diversity is even lower than might be anticipated, due to glaciation 12,000 years ago and the formation of continental ice, both of which reduced the opportunity for the evolution of endemics. The vegetation is characteristically open with much bare ground, and the plants exhibit xeromorphic characters.

At Beverly Creek Bridge, our first stop, we met Professor Art. R. Kruckeberg, esteemed for his botanical work in Wenatchee National Forest, and our guide for the day. Two ferns grew on the roadside banks at Beverly Creek. Rare in the Washington flora but common in localised sites, *Polystichum lemmonii* is an endemic found exclusively on serpentinite soils from the north of British Columbia to the Siskiyou Mountains in south Oregon. *Aspidotis densa* is also endemic and a good indicator of serpentinite soils, though is occasionally found growing on other soils.

Further along the river valley at Yahoo Horse Camp, the open forest was dominated by Douglas fir (*Pseudotsuga menziesii*), with other scattered tree species, whilst dominating the open ground vegetation was a prostrate serpentine form of common juniper (*Juniperus communis*), a prostrate ericoid – pinemat manzanita (*Arctostaphylos nevadensis*), and a blue grass (*Agropyron spicatum*), another serpentine indicator common in Washington State. A cryptogamic crust of mosses and lichens protected the open soil surface in this area. Again, pteridophyte species were conspicuous by their absence, but in some localised areas *Pteridium aquilinum* var. *pubescens* was a dominant of the ground vegetation and large quantities of *Adiantum aleuticum* subsp. c*alderi* grew along the banks of a stream running down the hillside. This serpentine form of *A. aleuticum* could be recognised by its crowded, imbricate pinnule lobes and the more upright, erect posture of its lamina branches. Lunch was taken at the Yahoo Horse Camp campsite, where *Equisetum arvense* was found.

A short walk from the campsite, and surrounded by typical open serpentine forest, was a small bog dominated by the moss *Philonotis fontana*. *Adiantum aleuticum* subsp. *calderi* was growing in the bog, and *Pteridium aquilinum* var. *pubescens* was growing around the bog. *A. aleuticum* subsp. *calderi* appeared to have a preference for moist areas; although not known for certain, it is possibly an edaphic ecotype.

Still further along the road, at Ingall's Creek, more than 5,000 feet above sea level, a steep climb was necessary that involved negotiating large, almost cliff-like boulders among which grew *Pseudotsuga menziesii*, again the dominant tree of the open forest. *Cryptogramma acrostichoides* and rather poor specimens of *Aspidotis densa* were found as part of the ground vegetation, together with dried-up, presumably dormant, plants of *Cheilanthes gracillima* and *Selaginella densa*. In crevices in the rocks a few rather reduced specimens of *Polypodium hesperium* were also found. On the other side of the road, growing at the base of rocks above a waterfall and the white-water rapids of Ingall's Creek, were more plants of *Polystichum lemmonii* and *Aspidotis densa*.

Despite the small number of pteridophytes seen, this was a botanically fascinating day.

Elandan Gardens and The Rhododendron Species Foundation (Sunday)

Martin Rickard

An early start was rewarded with a bracing trip across Puget Sound to Bremerton. The ferry was a really super way to start the day, relaxing with a cup of coffee in great company surrounded by magnificent scenery dominated by the receding Seattle skyline and the snowy dome of Mount Rainier.

From Bremerton it was a short drive, past three huge aircraft carriers, to Elandan Gardens, our first stop. Here we were given an introduction to the history of the gardens by the owner, Dan Robinson. This is not a fern garden, but it is a fabulous example of how bonsai and full-sized trees, driftwood, water features and ferns can combine to create a special ambience. I have never seen such dramatic use of driftwood – huge pieces, perhaps 20 feet tall, were strategically placed throughout the garden. Not really a 'stumpery' as I understand it but nevertheless a wonderful creative setting for a garden. Ferns were scattered throughout for effect, with one fern in particular attracting my interest. Apparently Dan Robinson discovered a heavily crested form of *Polypodium glycyrrhiza* in Oregon by the side of Interstate 5, a main motorway, about 20 years ago. He had the plant in the garden and although it was dormant for our visit, shrivelled fronds were recognisable as being very similar to the form I call *P. glycyrrhiza* (Grandiceps group). This is a complicated group and with the help of Judith Jones I hope to write it up separately in due course. We took our picnic lunch in the gardens right by the shore of Puget Sound, with any spare time spent browsing the fascinating on-site shop with its strongly Japanese product range.

photo: J.M. Ide

***Polystichum munitum* with tree stump, Elandan Gardens, Bremerton, USA**

After lunch we moved on to the Rhododendron Species Botanical Garden where the Hardy Fern Foundation holds its principal collection. We were shown around mainly by Michelle Bundy and Becky Reimer. Initially we admired the large number of plants waiting to be installed in the gardens and then, in baking heat, we slowly toured the wide collection of ferns in the garden itself, spread, I guess, over several acres. Unusually most taxa were represented by many plants; for example there could easily have been 50 plants of *Polystichum polyblepharum* in one drift. Elsewhere much smaller numbers represented rarer species. One plant of particular interest to me was *Blechnum niponicum*. It was very interesting to see it here, reinforcing my opinion that the populations of Pacific Northwest *B. spicant* are not the same as in Europe but have something of the 'giz' of *B. niponicum* in them. Cultivars were few but room was found for *Blechnum spicant* 'Serratum Rickard'! The whole garden was immaculate. At the time of our visit, many of the ferns were still fairly young, but plenty of room had been left for each plant to eventually show its full potential.

In a splendid collection like this there were a large number of ferns that are uncommon or absent in British gardens but seemed to be relatively widespread in the Seattle area, e.g. *Cyrtomium macrophyllum*, *Dryopteris* x *australis*, *D. bissetiana*, *D. championii*, *D. cystolepidota*, *D. formosana*, *D. indusiata*, *D. kashmiriana*, *D. lepidopoda*, *D. namegatae*, *D. scottii*, *D. uniformis*, *Polystichum neolobatum* and *P. retrosopaleaceum*. One or two ferns grown here would struggle in central England, e.g. *Doodia media*, *Hypolepis punctata*, *Rumohra adiantiformis* and *Arachniodes simplicior*. Clearly the climate is milder in Seattle, the coldest recorded last winter was -2°C – wouldn't I just love a climate like that! Despite the soft climate, tree-ferns are rare – there were none in this garden, but one or two were seen elsewhere, e.g. young plants of *Dicksonia antarctica* with a few inches of trunk, one *Cyathea cooperi* with about 12 inches of trunk in Willana Bradner's garden and a truly magnificent specimen of *Dicksonia fibrosa* in Sylvia Duryee's garden. Later in the week, I saw that *Dicksonia antarctica* and *Cyathea cooperi* were common further south in California.

Mount Rainier (Monday) **John Scott**

This was an early day, leaving the University of Washington at 7.30a.m. for our sojourn on Mount Rainier. On a clear day one can theoretically see Mt Rainier, rising 14,410 feet above sea level, from Seattle, which according to my topography map is 60 miles away. As we travelled on Route 410 I couldn't resist taking pictures, though shooting from a moving bus through a spotty window doesn't give the best results.

Our first stop was a viewpoint at Tipsoo Lake, with a wonderful view of Mt Rainier about ten miles away and a profusion of avalanche lily (*Erythronium montanum*).

Our second stop was the 'Grove of the Patriarchs', a marvellous stand of Douglas fir and our only really good look at the ferns of Mt Rainier. While the list of the Park's pteridophytes that we were provided with contained 49 species, I recorded only six. *Botrychium lanceolatum* was a second find for me, having only seen it for the first time the previous summer in New Jersey. Even though *B. multifidum* occurs in the east, this was my first sighting. The remaining ferns, western species not seen in the east at all, included *Dryopteris expansa*, *Gymnocarpium disjunctum* with yellow streaks, *Polypodium hesperium* and *Polystichum munitum*. Our western guides were calling all of their oak ferns *G. disjunctum*, though the *Flora of North America* shows both *G. disjunctum* and *G. dryopteris* in the Northwest. These plants looked like *G. dryopteris* to me!

Our third stop was Reflection Lake, aptly named as we could see a mirror-image of Mt Rainier in the water. In the wet seep across the road was a profusion of colour: red *Castelleja parviflora*, white avalanche lily, blue lupine (*Lupinus latifolius*), pink *Eupatorium occidentale* and dark pink buds of *Phyllodoce empetriformis*.

Our final stop was the Paradise visitor centre. This was my second trip to Mount Rainier, having travelled there with three naturalists from the Delaware County Institute of Science in Pennsylvania as a graduate student in May 1964. What I remembered most was the profusion of wildflowers and the compression of seasons from the coast – summer, to the glaciers of Mt Rainier – spring. This time was no disappointment. The alpine meadow at the foot of the glaciers was spectacular. A sampling of wildflowers in bloom included: *Castelleja parviflora*, shooting-star (*Dodecatheon jeffreyi*), avalanche lily, *Eupatorium occidentale*, *Lilium columbianum*, blue lupine, *Phyllodoce empetriformis*, false hellebore (*Veratrum viride*) and bear grass (*Xerophyllum tenax*).

Bainbridge Island Library and Jocelyn Horder's Garden (Tuesday) **Robert Sykes**

Our day began, as the best days should, with a ferry trip across Puget Sound, the snow-capped peaks of the Olympic Mountains along the western horizon and a mug of excellent Seattle coffee in hand.

First call was the fern garden of the Bainbridge Island Library. This is a creation of the Hardy Fern Foundation as part of its mission to encourage the use of ferns in the garden. It is set in a long strip of ground behind the library, shaded by trees. A ditch along one side took the drainage from the car park and provided a congenial setting for osmundas and other moisture-loving plants. It was established only three years ago and was masterminded, with volunteers, by John van den Meerendonk, a practising landscape gardener and newly installed as president of the Hardy Fern Foundation. After initial problems with a heavy clay soil, it was improved by rotavation and a heavy mulch with rotted bark. Not all the ferns had survived, and currently the *Arachniodes simplicior* 'Variegata' was struggling, but most ferns were flourishing and there were particularly fine stands of *Woodwardia fimbriata* and *Polystichum neolobatum*. John had some new ferns ready for planting. It provided plenty of interest for our group of specialists and certainly fulfilled well its objective as an educational demonstration garden.

On to Jocelyn Horder's wonderful garden at Poulsbo, where she greeted us and told us the history of the property. Apparently the site had originally been occupied by the local pastor, who in the absence of any roads used to row around the creek to service the needs of his flock. The garden is by the water, facing west to the Olympic Mountains. The main room of the house has a wall of glass to take advantage of the view. The sunsets must be superb. A narrow peninsula runs out from the house dominated by a huge sculptural dead tree, bleached by the weather. It must have taken courage to leave it when it died, but the effect is spectacular.

We were greeted at the gate by Denise Kelly, the gardener, and left free to wander. It is a garden of many elements – a pond surrounded by a rockery, a colonnade hung with *Wisteria* seed pods – you don't see that in England, a great bleached tree root, a trademark of Dan Robinson, whom we had met at the Elandan Garden and who did part of the design, a bonsai display, walks by the water; and always the smell of the sea. Some fine ferns too: a very elegant *Polystichum setiferum* 'Multilobum' with some light cresting, *Matteuccia orientalis*, brought as a *Blechnum* from Korea and unfamiliar to many of us. Jocelyn has a sure touch with *Cheilanthes* – a fine pot ornamented the porch and there was a wonderful great patch of *Cheilanthes fendleri* in the rockery at the front.

Our journey then took us round the coast to Port Angeles. There was no time that evening to go up the ridge behind to snatch a view of the Olympics, but we did go as far as the visitor centre, and a few of us went up a wooded valley on the Peabody Trail. There we saw *Polystichum munitum*, *Athyrium filix-femina* var. *cyclosorum*, *Dryopteris expansa*, *Gymnocarpium disjunctum*, *Adiantum aleuticum*, *Polypodium glycyrrhiza* and *Equisetum telmateia*. These seemed to constitute the typical woodland floor pteridophyte flora of the region.

Hoh River Rain Forest (Wednesday) **Jack Schieber**

The day started at 5a.m. for a group of four carried by Nils Sundquist in his car on a side trip to Hurricane Ridge, a high, more open part of the Olympic National Park, accessible from the Port Angeles area where we had stayed the night. There were no new fern species on the drive up and none were seen at the end of the road. Reportedly, there is a *Polystichum kruckebergii* 7.6 miles out on a trail – too far to go in the time permitted. Our visitors did report seeing a deer, a chipmunk and a marmot. New plants found included Menzies' larkspur (*Delphinium menziesii*) and white-flowered rhododendron (*Rhododendron albiflorum*).

As we drove in on the approach road to the Hoh Rain Forest, I was struck by the view of forest floor covered by ferns and I overheard someone on the bus exclaim, 'impressive'. People who are not fernophiles often confuse quantity with diversity, recommending as great a location that turns out to have only one fern species covering the ground. Some of us want localities where we can find many species and hybrid ferns. But as we rolled along in the bus I mused and became aware of the beauty of this woodland filled with sword fern (*Polystichum munitum*), a struggler in my eastern garden but seen everywhere on this foray. There is beauty in abundance and lushness just as there is in the plant itself. When I travelled in the UK, I saw everywhere that pestilent weed, bracken, and it is obviously a problem for farmers and other plants. But I make the challenge – close off the mind and let the eye hold sway – see that hillside covered with bracken – see the plant and its form – and be immersed in beauty.

The Hoh River Valley rainfall ranges from 140 to 167 inches (that's 12 to 14 feet) of rain per year as the Olympic Mountains disturb the moisture-laden winds from the Pacific Ocean; Port Angeles on the leeward side receives about 20 inches per year. The trees in the valley were old and huge and festooned with moss, creating an ethereal understorey that could be inhabited by Hobbits. The dominant trees, some reaching 300 feet in height, were sitka spruce, western hemlock and western red cedar. Big-leaf maple, vine maple, red alder and black cottonwood were the predominant deciduous trees. The Olympic National Park lists five trees recognised by American Forests as the largest living specimens of their species: Alaska cedar (*Chamaecyparis nootkatensis*), Pacific silver fir (*Abies amabilis*), subalpine fir (*Abies lasiocarpa* var. *lasiocarpa*), Engelmann spruce (*Picea engelmannii*) and western red cedar (*Thuja plicata*). The presence of nurse trees or nurse logs is a unique characteristic of this rain forest. The trunks of trees, long-since fallen, hold moisture in the process of decay and act as a nursery for tree and plant seedlings. And so we saw a line of trees growing along 100 feet of log having roots distorted to reach around the log to the earth beneath. It was not unusual to see a tree with roots circling a kind of hole where the nurse log had been and had rotted away.

From the Hoh Visitor Centre a Ranger guided us over the wood walkways that carried us among the flora and fauna. We noted all of the eight fern species listed in the Park handout, 'Ferns of the Hoh': *Polystichum munitum*, *Polypodium glycyrrhiza*, *Blechnum spicant*, *Athyrium filix-femina* var. *cyclosorum*, *Pteridium aquilinum* var. *pubescens*, *Adiantum aleuticum*, *Gymnocarpium dryopteris* and *Dryopteris expansa*. By our own expertise, we identified *Equisetum telmateia*, *E. arvense* and *Selaginella oregana*. The oak fern, which was everywhere on the ground, was the largest I'd ever seen.

Leaving Hoh and travelling south along the coast we first stopped at Ruby Beach where we had a lovely walk through the woods above the headland. Here we first saw coast polypody (*Polypodium scouleri*), and large burls on spruce trees.

Our next stop was 'Beach four', where we were greeted by a jumble of huge drift logs along the shoreline and huge impressive rock formations along the beach among which were scattered tidal pools. Down on the beach a Park Ranger gave us a short lecture on tidal pools and the peculiarities of the barnacles, sea anemones and hermit crabs that inhabit them. A starfish was shown to stick to the short hairs of my head and in pulling it away I lost a few more to the

chagrin of the Ranger. That night we stayed at Kalaloch Lodge on the beachhead, where we saw the most lovely clump of *P. scouleri* growing in a tree stump a few feet from a building.

Lake Quinalt (Thursday) **Alan Ogden**

Our day began rather later than usual due to the joys of Kalaloch Lodge. Perched on a low cliff overlooking the Pacific Ocean, the cabins had fantastic views. *Polypodium scouleri* grew on many of the large trees nearby, and *Polystichum munitum*, *Athyrium filix-femina* var. *cyclosorum* and *Equisetum telmateia* flourished in the undergrowth.

We had a short bus ride south to 'Beach one', and we approached the sea cliff through a wood where again the sitka spruce carried burls. These huge tumours are not fully understood but are initiated by a small grub that attacks the leader bud of the tree when it is young. The burls didn't appear to affect the health of the trees and they provided convenient perches for *P. scouleri*, which grew in profusion. It did not seem to be too inconvenienced by the spell of dry weather; no doubt there is more moisture near the coast.

The ferns we saw at the Lodge also grew here, with the addition of *Dryopteris expansa* and bracken. Our attention was also drawn to the false lily of the valley (*Mianthemum dilatata*), which grew in quantity beneath the huge trees. Looking along the beach there was an impressive amount of dead timber along the high tide line. These huge logs are piled high all along this coast and there are warning signs that they can maim or kill the unwary when tossed by stormy seas.

photo: courtesy A.H. Ogden

Pacific Beach, Olympic peninsula, Washington, USA

Back: Jerry Little, Jennifer Ide, Pat Acock, Graham Ackers, Martin Rickard, Lyman Black, Nils Sundquist, Jack Schieber

Middle: Richie Steffen, Sylvia Duryee, Alan Ogden, Peter Meegdes, Becky Reimer, Bill Plummer, Michelle Bundy

Front: Mick & Linda Craddock, Christian & Margit Kohout, Rose Marie Schieber, John Scott, Robert Sykes, Sue Olsen, Joy Neal

At 9.45 we moved on, and further down the coastal road came to Lake Quinault Nature Walk where there was a short loop for gentle walkers and a longer trek ending at the hotel for the more athletic ones among us. There was a lovely walk through temperate rain forest where the moss-draped trees, vegetation and fallen trunks were so thick that it would have been impossible to make progress were it not for the trails prepared for visitors. It was not long before we took a wrong turn, which was fortunate as it led us alongside a pretty little stream where *Adiantum aleuticum* decorated the steep sides of the valley. We soon found the right trail, where *Polystichum munitum* grew in profusion as it does all over this area, with *Blechnum spicant* interspersed in the damper patches. *Athyrium filix-femina* var. *cyclosorum* and *Pteridium aquilinum* var. *pubescens* were noted again and the oak fern (*Gymnocarpium disjunctum*) covered the ground in any clearings. Those who took the longer trail noted *Equisetum telmateia*, *Lycopodium clavatum* and a bifid form of *Blechnum spicant* growing in some quantity.

Lunch was taken at Lake Quinault Lodge, which was situated on the edge of the lovely Lake Quinault. Rather more imagination was shown over the lunch, which had an unusual combination of ingredients in some traditional recipes.

In the short time available before we boarded the bus for the long drive to Kelso, Pat Acock found both *Equisetum fluviatile* and *E. palustre* at the edge of the lake. On the long journey it was interesting to see how the trees ended when we left the National Park. We ended our journey at the Red Lion Hotel at Kelso, where we spent the night and some members made use of the pleasant outdoor swimming pool while others settled into the huge bar area.

Mount St Helens (Friday) **Pat Acock**

This was an absolute must for the tour. We had lodged within striking distance of the volcano the night before and reached the first visitor centre early. After looking at the interpretation displays and watching the short films we started the long drive to the closest point to the volcano that is accessible by road. Nothing really prepares you for the power and devastation caused by one of these cataclysmic events. Two-foot diameter trees snapped off at waist height five miles from the blast, and the size of the hole in the side of the volcano do, however, bring home the reality of it all.

Whilst many took in the sights and looked around the top ranger station, I set off to travel as far as I could in half the time allotted to see what ferns had colonised the eerie terrain. *Equisetum arvense* was the first pteridophyte apparently to be recorded from the area and we had seen much supporting evidence on the way up, but I was pleased to find *Polystichum munitum* and *Athyrium filix-femina* var. *cyclosorum* also making a start. However, the swards of flowers in some areas were breathtaking, especially the paintbrush (*Castilleja parviflora*), growing in apomictic clones with bracts ranging from vermilion to cerise to magenta.

Too soon we were on our way back. Our evening was to be spent at a celebration dinner in the penthouse restaurant of Lyman Black's apartment complex and we had to cover some distance. At dinner, Graham Ackers kindly led the vote of thanks to the large number of helpers who had made the excursion possible but principally to Sue who had organised the tour to perfection, putting in hours and hours of planning and discussions to finally come up with just that right balance of gardens and field meetings that really was the 'Best of the West'.

We then had a chance to look around Lyman's fern garden with the waters of Lake Washington gently lapping all around, before finishing the tour with a lecture and slide presentation by Martin Rickard on some of the best fern gardens he knows. We then had to say our final goodbyes, but not before Jerry Little, our coach driver for most of the tour, made a small speech. Jerry had played no small part in making sure that we were comfortable throughout the hot weather that accompanied the trip and with his cheery good nature kept us amused and 'on task'.

We hope that the friendships and contacts made during the tour will develop into mutual support and understanding of each other and generally further our aims to develop the interest and conservation of our beloved ferns.

FOREST OF BOWLAND AND SOUTHPORT FLOWER SHOW, LANCS. – 22-23 August

Pat Acock

Four of us met on Friday morning at the head of Brock Valley Nature Trail (34/549430), about eight miles north of Preston. Armed with a list of ferns found on my 'recce' we set off at a reasonable pace, which continued until Barry Colville realised that this was an excellent site for molluscs. This allowed the rest of us to scout around more and it was not long before Frances Haigh had added *Blechnum spicant* to the existing list. In a large meadow above the trail, flushed gently with bases, we found an enormous stand of *Equisetum telmateia*, and just below on the riverbank were two magnificent plants of *Polystichum aculeatum*. On an old mill further down we found *Asplenium ruta-muraria* and just beyond this we came across a very large specimen of what was almost certainly *Dryopteris* x *complexa*. We retraced our steps and crossed the car park to examine a wall, thus adding *Asplenium trichomanes* subsp. *quadrivalens*. The other ferns recorded were *Dryopteris filix-mas*, *D. dilatata*, *D. affinis* subspp. *affinis* and *borreri*, *Pteridium aquilinum*, *Athyrium filix-femina* and *Polypodium vulgare*.

photo: P.J. Acock

Joan Hindle, Frances Haigh & Barry Colville in Forest of Bowland

We then moved on to lunch a mile or so to the east, at Beacon Fell Country Park (34/565427). The wood was characterised by having lots of ferns. Unfortunately we estimated that more than 95% were *Dryopteris dilatata* and most of the rest were bracken. However, we did add *Equisetum arvense* and *Oreopteris limbosperma* to the morning's roll-call after toiling through thick rushes and having a young mum coming over and enthusiastically thrusting some baby frogs at us to examine. She obviously guessed we were kindred spirits. After these exertions we sat down on a strategically placed bench for four, overlooking an island in a pond. Now was it just our imagination playing tricks on us or was that emerald green fern… Just as I was thinking that I was to be volunteered to wade out, a pair of binoculars was found; all four of us examined the plant from afar and concluded that we were right; we had found *Osmunda regalis*. After a cream tea back at the visitor centre we departed on our separate ways.

I had obtained two tickets from Matt Busby for Saturday for the Southport Flower Show. Unfortunately, I failed to contact Rita Baker, who was the only other member pencilled in for the meeting, and only met her once we were inside. The show is still a *tour de force* of all things horticultural. Matt was ably assisted on the BPS stand by Ray and Brenda Smith and Ann Gill. The theme of the show was 'Plants and Literature' and Matt had done a great job for the Society of finding many references to ferns from Shakespeare and the classics, which were well arranged among the fern exhibits to very pleasing effect. [See also Matt's account of the Show on p. 152.]

Rita and I felt a little guilty about taking Ann away but she was keen to show us one stall in particular as well as to see a little of the show herself. Our overall impression was that although perhaps the Society may not have had a high profile over recent years, the hard work of members doing a little here and there must have influenced the present times. Everywhere we went ferns were being used discretely and subtly. Two stands stood out fern-wise: Kaye's Silverdale Nursery, which had some beautiful ferns, and also Trevana Cross Nursery, Helston. I spoke to the owner of Trevana Cross who had imported some real gems from a New Zealand nursery. Two that caught my eye were the *Asplenium* hybrid 'Maori Princess' (*A. bulbiferum* x *A. oblongifolium*) and well grown *Blechnum fluviatile*.

photo: P.J. Acock

Rita Baker & Gary Manser in Southport Fernery

Time flew by, and Rita and I only just made the doors of The Southport Fernery, Churchtown with a minute to spare. At 1pm on the dot, Gary Manser, the person in charge, appeared and took us around. The fernery had lots of potential, with tufa walls providing the right growing conditions for ferns. Gary was able to spend sufficient time in the fernery in between his other commitments to keep the place weed-free and tidy and he had recently added a few new plants. The fernery, however, was inundated with fern weeds such as *Adiantum capillus-veneris*, *Asplenium bulbiferum*, *Cyrtomium fortunei*, *C. falcatum* and *Pteris cretica*. Other dominant weeds were ivy-leaved toadflax and *Asparagus sprengeri*. All these plants would make a good backdrop for other ferns and a few more choice ferns would really enhance the fernery. Budgets are tight these days but with the cost of maintenance and Gary's time to keep the fernery nice, the extra expense of a few new plants each year would seem minimal and we hope Gary can continue to add to the collection. We gave him suggestions as to where he may receive help but if you feel you could donate a few plants or live nearby and could help in any other way, I'm sure Gary would be pleased to hear from you.

Although few in number, when we were trying to encourage more members to visit Southport Flower Show, I feel we had a splendid weekend of good weather, excellent company and some lovely ferns.

LYNTON, DEVON – 12-14 September

A.R. Busby

Some twenty-eight members assembled at the Bridge Inn, Lynton on the Friday evening to be briefed on the weekend's meeting by the leader, Paul Ripley. He circulated a handout providing details of the sites to be visited. We were fortunate to be blessed with the most gorgeous September weather although the fern growers amongst us were agreeing how desperate we were for some rain.

Saturday came and our first port of call was at Ashcombe, Simonsbath at 21/774394. Close to the car park were the public conveniences, which gave us our first glimpse of the ferns in the area. On the walls we found *Asplenium trichomanes*, *A. ruta-muraria*, *A. scolopendrium*, *Polypodium vulgare* and a couple of small plants of *Cystopteris fragilis*. More hart's tongue was found along the small brook that ran through the car park.

We made our way alongside the brook and quickly found large areas of bracken, *Pteridium aquilinum*. It was also pleasing to see *Polypodium vulgare* growing as it should be seen, as an epiphyte on the branches of the trees. Throughout the woodland we found *Dryopteris filix-mas*, *Athyrium filix-femina*, *Blechnum spicant*, *Dryopteris dilatata* and *D. affinis* agg. *D. affinis* subsp. *borreri* was quite abundant in this area, as it was throughout the area we visited over the weekend. This gave us the opportunity to discuss and examine its distinguishing features. Nick Hards concluded that *D. affinis* subsp. *affinis* was also present at this site although it was not seen at any other place we visited. In the more open areas we found *Oreopteris limbosperma* and a strong candidate for *D. affinis* subsp. *cambrensis*, a frond of which was taken for further study. *Polypodium vulgare* was also very evident and we quickly realised that both *P. vulgare* and *P. interjectum* were present. The consensus of opinion was that *P. vulgare* tended to be on the trees (although it also occurred on walls) and *P. interjectum* was mainly found on the walls.

Retracing our steps to the car park, Paul led us on to another site close by the road some three-quarters of a mile away at Lime Combe (21/765394). Here we were shown a small but well grown plant of beech fern, *Phegopteris connectilis*. This was a good find because it is not at all common in that area. During our ramble to this site we passed a low retaining wall thickly furnished with more *Asplenium trichomanes* with several *A. adiantum-nigrum* amongst it.

photo: J.M. Ide

***Pteris cretica* in Joan Loraine's garden, Porlock**

By now it was midday and Paul's excellent planning found us outside Boevey's Restaurant so we were able to take lunch. *Polypodium vulgare* and *P. interjectum* were found growing together at one place on the surrounding walls, which gave a good opportunity to compare them.

After lunch we made our way across moorland for what we considered to be the highlight of the weekend, a visit to Joan Loraine's garden at

Porlock. During the drive over to Porlock, Nick Hards and some of the party stopped to inspect the ferns on the high moorland at Chetsford Water (21/847420). *Oreopteris limbosperma* was particularly abundant there.

photo: P.J. Acock

Joan Loraine talks to members about her garden

Joan met us at her gate and ushered us onto the lawn at the side of the house where she gave us a talk on the recognition of *Polystichum setiferum* and its varieties. After a most interesting talk and armed with maps of the garden, we explored the various ferns that Joan had kindly drawn to our attention. It had been some ten years since my last visit to Greencombe and it had lost none of its charm. Indeed, Joan had added a new dimension to the garden, which many of us found quite a delightful surprise. At the far end of the garden she had built a small, round timber building. Described as a Millennium Chapel, a few seats were arranged around the sides of the building and a representation of the Holy Mother and Child, exquisitely carved from sweet chestnut, provided a focal point for quiet contemplation. The site chosen, with its wooded surroundings, provided an ideal site for peaceful reflection. I had always considered Greencombe as a truly remarkable garden but this new addition gives a totally new and perhaps unique corner. At the end of our garden tour, Joan kindly invited us into her home to enjoy tea with home-made scones and cakes.

Some of the party stopped in the car park at Lynmouth, from where a short walk along the sea front enabled them to admire the *Asplenium marinum* on the sea wall and cliffs (21/721498). During the 'recce' this species had also been found in the Valley of the Rocks, to the seaward side of Castle Rock, where it was not found during the Society's previous visit. Returning to Lynton, we all gathered at the Bridge Inn for evening drinks and supper at the end of a very successful and pleasant day.

Sunday dawned bright and clear and we all made our way the short distance to Watersmeet (21/744486), arguably the most scenic part of Exmoor. We made our way down into the gorge. Here we were able to add to the previous day's list with *Polystichum setiferum* and *Hymenophyllum tunbrigense*. In spite of diligent searching we were unable to find its companion, *H. wilsonii*. Another item of interest was the occurrence of the gametophyte stage of *Trichomanes speciosum* in a small cave opposite the Watersmeet tea rooms and National Trust shop.

Loth as we were to leave such a ferny setting, we went on our way and stopped at a car park on the high cliffs to take advantage of the panoramic view across the Severn estuary. Descending into the Hebden Valley we made our way to the Hunters Inn where Paul had thoughtfully reserved tables for our lunch.

After lunch it was with much regret that I had to depart for home, leaving Paul to lead the meeting on to Woody Bay. The party first visited Trentishoe Church (21/647486), where it was hoped to see five aspleniums on the walls. Unfortunately, it was only on driving away that Nick Hards realised that the *A. ceterach* was on a wall a short distance down the hill.

After parking above Woody Bay (21/675489), it was only a short stroll before we first came across *Dryopteris aemula*. This seemed to be quite selective but in places was the dominant species, although on the slopes it was suffering from treatment intended to kill the ubiquitous *Rhododendron ponticum*. A small, crested *Dryopteris filix-mas* was found and lower down we came across *Asplenium ceterach* on a wall. Both *Polypodium vulgare* and *P. interjectum* were present and it was felt that one particularly impressive plant might be *P.* x *mantoniae*. Some material from that and a possible plant of *Dryopteris* x *complexa* were taken away for further examination.

Altogether this was a highly successful meeting; 22 or 23 taxa of ferns (plus two possible hybrids) were found but, curiously, no fern allies. Our thanks to Joan Loraine for her usual kind hospitality and for providing such delicious refreshments, to Nick Hards for assisting with this report and to Paul Ripley for organising such a splendid meeting.

photo: A.R. Busby

Joan Loraine's house, Porlock

Back: Ray Smith, Karen Munyard, John Acock, Leonard Winning, Michael Hayward, Sandy Strang, Steve Munyard, Jonathan Crowe, Derick Turner, Christine Mullins, Paul Ripley, Peter Tindley, Pat Acock, Roger Golding

Middle: Tony & Mary Atkinson, Tim Pyner, Andrew Leonard, Joan Loraine, Brenda Smith, Linda & Mick Craddock

Front: Eily & Paul Ruston, Nick & Eleanor Hards, Jennifer Ide, Graham Ackers

Pteridophytes recorded during meeting in Lynton, Devon

	Ashcombe	Lime Combe	Chetsford Water	Lynmouth	Watersmeet	Trentishoe Church	Woody Bay
Hymenophyllum tunbrigense					✓		
Trichomanes speciosum					✓		
Polypodium vulgare	✓	✓			✓	✓	✓
P. interjectum	✓				✓		✓
P. x *mantoniae*							?
Pteridium aquilinum	✓	✓	✓		✓	✓	✓
Phegopteris connectilis		✓					
Oreopteris limbosperma	✓		✓				✓
Asplenium scolopendrium	✓	✓			✓	✓	✓
A. adiantum-nigrum		✓			✓	✓	✓
A. marinum				✓			
A. trichomanes subsp. *quadrivalens*	✓	✓			✓	✓	✓
A. ruta-muraria	✓					✓	✓
A. ceterach						✓	✓
Athyrium filix-femina	✓	✓	✓		✓	✓	✓
Cystopteris fragilis	✓						
Polystichum setiferum					✓		✓
Dryopteris filix-mas	✓	✓	✓		✓	✓	✓
D. affinis subsp. *affinis*	✓						
D. affinis subsp. *borreri*	✓	✓	✓		✓	✓	✓
D. affinis subsp. *cambrensis*	?						
D. aemula							✓
D. dilatata	✓	✓	✓		✓	✓	✓
D. x *complexa*							?
Blechnum spicant	✓	✓	✓		✓		✓

THE AMERICAN FERN SOCIETY

The AFS invites all readers of this *Bulletin* to join the American Fern Society. You are welcome to visit the AFS website: amerfernsoc.org. Regular members receive *Fiddlehead Forum* five times a year, a newsletter published for those who are interested in growing ferns, hunting for them and expanding their knowledge of ferns. Journal members also receive the scientific quarterly *American Fern Journal*. Membership costs $19 and $32 per annum respectively for members residing outside USA, Canada or Mexico, including postage for airmail-assisted delivery. For particulars please write to Dr George Yatskievych, Missouri Botanical Garden, P.O. Box 299, St Louis, Missouri 63166-0299, USA (george.yatskievych@mobot.org). Prospective members residing in Great Britain should write to Mr M.S. Porter, 5 West Avenue, Wigton, Cumbria CA7 9LG (Membership@eBPS.org.uk).

AFS SUBSCRIPTION PAYMENTS: Our societies have an exchange arrangement whereby members of the BPS can pay their AFS subscription through the BPS Membership Secretary and *vice versa*. Contact your Membership Secretary for details.

LECTURE MEETINGS AND DAY VISITS 2003

SPRING INDOOR MEETING, THE NATURAL HISTORY MUSEUM, LONDON – 22 March

Graham Ackers

As has happened frequently in the past, this meeting was held at The Natural History Museum, a highly appropriate and conveniently central venue. The Museum, and in particular the Society's members on the professional staff, have always been most supportive of our activities, and this event was no exception. The Mineralogy Seminar Room was a new venue for us and was ideal for this meeting. For the morning session it was felt appropriate to reflect the work of the Museum, and so we were treated to three talks on the themes of fern classification and curation.

The first talk, by Josephine Camus, was titled 'History of fern classification'. The pre-Linnaean fern names situation was illustrated by Josephine showing pictures of some ancient (16th century) manuscripts. Here we saw how the identities of *Asplenium scolopendrium* and *A. ceterach* were confused; this was important as they were used to treat very different ailments. However, the earlier conquering influence of the Romans had imposed a *de facto* Latin language standard for the publication of learned works. Josephine then established the need for accurate naming, by showing slides of both *Hyacinthoides non-scripta* and *Campanula rotundifolia*, both being known as a bluebell in England and Scotland respectively. Definitions of systematics, taxonomy and phylogeny were presented, and the species was cited as the unit of classification. The binomial system of Linnaeus was introduced in the *Species Plantarum* in 1753 (the baseline for plant names). Perhaps some members of the audience were unaware of the fact that the establishment of Linnaeus' binomial system was partly accidental. Linnaeus' adopted approach was to provide an extended Latin name for each organism, plus a shortened form (the binomial) for convenient use where the longer form was inappropriate or unnecessary. The shortened form prevailed! Although John Ray had thought that all parts of a plant should be used for classification, Linnaeus chose to base his fern taxonomy on the sorus alone. This approach continued to be followed by such luminaries as W.J. Hooker and J.G. Baker, although others had started to consider the use of non-soral characters. However, the real breakthrough did not occur until the 1940s, when R.C. Ching started to use a multiplicity of characters. He and other authors presented their own systems for the higher classification of ferns, entailing the differentiation of many more genera than Linnaeus had defined. This in turn has contributed to the convoluted naming history of many ferns, and Josephine provided detailed examples with two well known ferns – *Phlebodium aureum* and *Gymnocarpium dryopteris*. Despite being easily recognisable and stable entities, both species have been encumbered with many names in the past! The talk included a discussion of naming processes – the type specimen concept, the meanings of names, abbreviations of authors, generic changes, and in particular the current importance of the *International Code of Botanical Nomenclature*. Josephine's talk was full of fascinating detail, and this brief summary does no more than give a flavour of its content.

The next talk was given by Alison Paul and was titled 'The workings of the herbarium'. Essentially, a herbarium exists to provide pressed reference plant specimens. The Natural History Museum's herbarium is one of the world's third largest, tying for this position with St Petersburg and New York (about 6 to 6.5 million specimens each), the largest being Paris (about 9m specimens), and second largest Kew (over 7m specimens). These are all national herbaria, the distinction being drawn between these, regional herbaria and personal herbaria. Alison gave a brief history of The Natural History Museum, from its origins in 1753 in the British Museum's Department of Natural and Artificial Productions, which was divided into three natural history branches (later departments) in 1837, the move of the

natural history departments to South Kensington in 1881 and their official separation from the British Museum in 1963. Alison went on to describe the history of the botanical collections, including the substantial boosting of the pteridophyte collection with the acquisition of John Smith's personal herbarium. Both Kew and The Natural History Museum now have a very large number of fern specimens (over 250,000 each), with more being acquired each year. There is a large backlog of specimens awaiting incorporation into the herbarium, and Alison's retirement goal had been to complete this project. However, assuming the current annual rate of incorporation of about 2,000 specimens and as there are currently 69,000 awaiting attention, the realisation has dawned that this goal may be unattainable! Alison continued her history by recounting the locations of the Cryptogamic Herbarium, showing a picture of the flowering plant herbarium, which then occupied the present site of 'the crypt', following the incendiary bomb damage in 1941, and a further picture in the less cluttered days of 1968.

The landmark publication *A new generic sequence for the pteridophyte herbarium* by Crabbe, Jermy and Mickel in 1975 provides the filing arrangement in use in the herbarium, though this has been modified over the years.

The herbarium is a rich source of historical and distributional information. It is most helpful to have more than one specimen of a species in order to demonstrate variation, and provide potential source material should a species be split. However, there had been over-zealous collection of some species, and Alison showed a picture of a herbarium sheet of *Ophioglossum lusitanicum* containing over 100 specimens. This was clearly over the top, and to be deplored on conservation grounds. To be of value, the herbarium should be used as much as possible, and this was now being further facilitated through the modern concept of the 'virtual herbarium' – i.e. making databases and images of specimens available via the Internet.

Alison then described the acquisition process. All specimens are frozen on arrival to kill insect pests, which can be a problem in temperate climates (but are a far greater problem in the tropics). In addition to her fern herbarium responsibilities, Alison also co-ordinates Integrated Pest Management for the whole department! Following databasing (and labelling if necessary), acquisitions are 'laid out', a process requiring a combination of artistic and practical skills and understanding of the plants. The importance of this stage was demonstrated by examples of both good and poor layouts. Next comes mounting with glue and linen straps. Although the main collection is in the form of specimens mounted on paper, there is also a collection of ferns preserved in 'fern pickle' (a concoction based on industrial methylated spirits), a useful preservation medium where sectioning for microscopic examination is required. Finally, Alison showed us her job description, which did not seem to allow any time for eating and sleeping!

Fred Rumsey commenced his talk 'What is a species?' by highlighting how controversial a discussion point this can be! Compared to some other plants, however, fern entities have remained relatively stable. Fred's view is that the species concept 'generally works', but is more difficult to actually define. Particular difficulties arise when considering/anticipating the past/present/future evolutionary changes that an entity can undergo. Historically, species were defined by the morphological similarities between specimens. However, in the 1950s Ernst Mayr introduced the biological species concept of interbreeding natural populations. Unfortunately, difficulties can arise with this over a geographical continuum of closely related interbreeding populations. For example, spread across a continent, A can breed with B which can breed with C which can breed with D, but A cannot breed with D. Another 'problem' with Mayr is that 10% of ferns are apomictic, and so do not 'interbreed'. Another example of why the morphological concept does not always work was provided by the *Athyrium flexile* and *A. distentifolium* situation, two morphotypes looking different, but in fact being interfertile examples of what must be considered a single species

(*A. distentifolium*). Fred bemoaned the fact that project funding was difficult to obtain, unless the proposed study was on a 'good' species (so in a sense it was unfortunate that '*A. flexile*' was no longer that!). As a corollary to this example, the morphological concept was also weakened where two or more entities looked very similar, but were in fact different 'cryptic' species, examples being given in the genera *Polypodium* in Britain, and *Botrychium* in North America. Because there are relatively few fern species in Britain, and because spores can travel great distances, we have no narrow endemics here.

Speciation can occur in several ways. Primary speciation occurs where lineages diverge through isolation, either geographical or ecological. An example of the former process in action was given. The ferns *Dryopteris azorica* (Azores), *D. maderensis* (Madeira) and *D. intermedia* (North America) are closely related, to the extent that the first two are considered by some to be subspecies of *D. intermedia*. Another difficulty occurs in the *Diphasiastrum* complex, where apparently well defined species interbreed to produce fertile offspring, suggesting that only a single species may in fact be involved. Here the ecological separation that has allowed these taxa to diverge breaks down in certain situations. Fern speciation is, however, more often the result of a more rapid process of change and reproductive isolation, that which includes polyploidy alone (autopolyploids), or in combination with hybridisation (allopolyploidy). New species formed in this way may be morphologically very similar to their descendants, posing difficulties for identification. Fred showed slides of the two well known Guernsey endemic hybrids *Asplenium* x *microdon* (*A. scolopendrium* x *A. obovatum* subsp. *lanceolatum*) and *A.* x *sarniense* (*A. adiantum-nigrum* x *A. obovatum* subsp. *lanceolatum*) to demonstrate the clear morphological difference from the parents in the former, and the close morphological similarity with the parents in the latter. This secondary speciation is occurring in most fern groups, including the most taxonomically difficult such as the *Asplenium trichomanes* complex. Although these entities look morphologically similar, their populations are divergent and they cannot interbreed, therefore they must be considered as distinct species. Fred gave us an excellent flavour of the issues involved in answering the question posed in the title of his talk, but stopped short of providing the definitive answer!

The lunch break provided the opportunity for members to peruse the books and merchandise tables, where Bryan Smith displayed some tempting new BPS ranges of clothing, cards and mugs. Then followed the AGM, which is minuted elsewhere.

Following the AGM, Jennifer Ide showed a few slides of the fern dell at Brodsworth Hall in Yorkshire. This is where the fern collection of the late Eric Baker now resides, and Jennifer's shots well illustrated the layout of this attractive garden feature.

Members then had the choice of indulging in 'fern chat', or accompanying Alison to the herbarium. The first part of this visit was to see Sir Hans Sloane's Herbarium, the founding Museum collection. Here we inspected an example of *Phlebodium aureum*, one of the species Josephine had used to illustrate her talk. It was awe-inspiring to realise that this specimen was over 300 years old. This herbarium is set aside in its own room with a controlled environment. The herbarium sheets are bound into volumes and housed horizontally in attractive wooden cabinets. The collection also includes other Sloane artefacts, such as the 'vegetable lamb of Tartary' (the rhizome of *Cibotium barometz*). We then moved to the Cryptogamic Herbarium, where Alison had on display fern herbarium sheets, many of which had been used to illustrate her talk. She gave an informal account of various aspects of the herbarium, including the work required when genera are revised, how one learns to interpret abbreviations, the herbarium index and the spirit collection.

So ended a highly enjoyable day, 'engineered' by Alison, Fred and Josephine. As well as preparing and presenting their respective talks so wonderfully, they also performed all the groundwork and logistics to provide such a well run and memorable day. Thank you all!

TREE-FERN MINI-SYMPOSIUM AT RBG KEW, SURREY – 8 November

Graham Ackers (a.m.) & Pat Acock (p.m.)

For some time it had been our intention to hold an indoor meeting centred around one of the BPS Special Interest Groups, and this was the first one. The Tree-Fern SIG was started nearly ten years ago by Martin Rickard and has been run in recent years by Alastair Wardlaw. The group has been very active, producing a Newsletter and horticultural surveys. The programme for this meeting was designed to be an overview of tree-fern biology, with a horticultural bias.

Perhaps appropriately then, Martin Rickard gave the first presentation: 'Tree-ferns of temperate lands'. Martin has had wide experience of growing tree-ferns in temperate lands (i.e. England!), so clearly the talk was angled at relating the wild growing localities and conditions with actual and potential cultivation viability. A tree-fern world location map was shown (from 1975 *Fern Gazette* 11: 74), indicating their pronounced southern hemisphere distribution (and also showing that most tree-ferns are in fact tropical). Martin then went on to show slides and discuss tree-fern species from many lands, with special emphasis on those occurring in cold(ish) and/or high altitude locations. Wild plants were shown from Nevis, Mexico, Chile, South Africa, Papua New Guinea, Australia (various localities), New Zealand and Hawaii, and locations with cultivated plants included Madeira, Australia, Glasgow, County Kerry, Hereford and London (Chiswick).

The enticing title of Chris Page's talk was 'Why be a tree-fern?' He described the advantages and disadvantages of the structure and growth patterns of tree-ferns. In order to colonise, tree-ferns require large virgin disturbance sites such as can result from landslides, fire etc. Such events do not happen very often, but when they do, spores can start to germinate and grow very quickly, particularly as tree-ferns are edaphic generalists in terms of substrate requirements. The characteristic tree-fern architecture of a large, high-placed crown reflects this ability to develop quickly. This enables the plant initially to outstrip competitors in speed of growth to maintain access to light, and indeed many tree-fern species are adapted to conditions of high light intensity (compared with other fern groups). The high-placed crown also allows the effective distribution of spores, which are produced in very high numbers in tree-ferns, and may be broadcast for each plant over a period of several hundred years. But not all is 'good news', as tree-ferns have some disadvantages too. For example, compared with other ferns, their energy investment is high in making the trunk, and they are space-demanding, which is not so good in a highly competitive environment. An interesting link to Martin Rickard's talk was the thought that the southern bias of tree-fern distribution could have resulted from the higher tectonic activity thereby producing more disturbance sites. Northern hemisphere sites with such activity tend to have unsuitable climates for tree-ferns – e.g. too dry in the Mediterranean and too cold in the Atlas Mountains.

The title of Alastair Wardlaw's talk 'A gardener's view of tree-fern taxonomy' perhaps hinted at amateur frustration with some aspects of tree-fern identification - for example, a field botanist knows which country he/she is in (hopefully!), but a gardener buys tree-ferns on trust. Identification being based in part on structure and location of sori, difficulties can be experienced before a plant produces spores. The importance of scales and hairs for identification was emphasised and demonstrated in Alastair's talk. Particularly interesting was his picture of various tree-fern scales transferred to graph paper. Since regional floras produced by professional botanists rarely compared species to those in other areas, it was difficult to gain an understanding of the range of variability and similarities within say *Dicksonia* (even more of an issue in the very much larger genus *Cyathea* in its 'lumped' circumscription). However, some publications were felt to be helpful. For example, the *European Garden Flora* (1986) includes taxonomic keys, and the recently published *Fern Grower's Manual* (B.J. Hoshizaki & R.C. Moran, 2001) includes pinna outlines of

Dicksonia antarctica and *D. fibrosa* showing their relative width:length differences. A conservation dimension to the talk was introduced by highlighting the plight of such species as *D. arborescens*, an endemic of St Helena where it occurs as a very restricted population (and it is incidentally the type species of the genus).

Following a generous lunch break when we were able to discuss matters pteridological with members new and old, we had a diverse and interesting members' slide-show continuing the interest in tree-ferns.

Jennifer Ide mainly showed tree-ferns in New Zealand with an emphasis on their uses. For some time she has been interested in the work of Anton Seuffert and she showed slides of his marquetry of tree-ferns on furniture and fern books.

Alan Ogden regaled us with his exploits of tracking down *Cyathea weatherbyana*, the endemic tree-fern of the near desert-like region of the Galapagos Islands. He found it high up in the frequently misty weathered craters amongst adiantums, microsorums and *Doryopteris*. He then showed slides of the BPS south-west Ireland trip in May, where many tree-ferns were caught on camera with a number of the members.

Christine Mullins showed us slides of New Zealand tree-ferns and posed an interesting question when showing slides of *Cyathea smithii* right up close to a glacier: 'Why can't we grow them here if they live so close to the ice in New Zealand?'

Chris Page is both a trustee of Penjerrick Gardens and a director of Trebah Gardens. These two coastal gardens in the extreme south-west of England benefit from the warm Gulf Stream. Both gardens are famous for their tree-ferns, mainly but not exclusively *Dicksonia antarctica*. Some of the plants are probably 200 years old, the trunks having been brought back in the 1820s as ballast in the days of the clipper trade with Australia. Even some that have self-sown are in excess of 60 years of age.

John Woodhams finished this section with an interesting collection of tree-ferns: *Cyathea contaminans* from his trip to New Guinea, *Blechnum nudum* from Martin Rickard's Chelsea Flower Show exhibit and a wonderful picture of his own *Dicksonia antarctica* in mid-winter absolutely covered in snow, followed by a summer picture of unaffected splendour.

Bob Johns next gave us a fascinating lecture on 'The ecology of tree-ferns in New Guinea'. After describing the size and montane nature of New Guinea, he took us slowly through the phytogeographic regions. The greatest number of species is found in the montane tropical forest. New Guinea is probably the centre of diversity of *Cyathea*, having over 130 species, most of which are endemic. The true number of species may be very much larger, since collections have been made in few areas and many of Bob's own collections have yet to be identified. In seemingly connected valleys one tree-fern may inhabit one valley and another species the next. Problems of cultivating the subalpine and alpine species of tree-ferns were discussed. In the wild they experience wide daily fluctuations in temperature, e.g. –5°C to +5°C. Quite complex artificial regimes may be necessary to keep these plants alive outside their natural habitat. Bob

photo: A.C. Wardlaw

Bob Johns at tree-fern mini-symposium at RBG Kew

reported that, with the notable exception of *Cyathea contaminans*, few tree-ferns occupy major disturbance sites.

Alastair Wardlaw and Martin Rickard chaired a discussion on the conservation of tree-ferns. Clive Jermy, unavoidably absent, had prepared a useful handout with some key points for consideration.

Much discussion took place on whether the bureaucracy surrounding CITES (Convention on International Trade in Endangered Species) and other legislation designed to protect either the ferns themselves or the rights of the country of origin was in fact hampering the process of conservation. It is difficult to obtain material of different species of tree-ferns for *ex situ* conservation. Chris Page spoke about one Darwin Initiative Project that had helped in the conservation of the ferns of Mauritius. Flora & Fauna International's indigenous propagation projects were also mentioned; these aim to provide a viable replacement for trade in indigenous plants.

Barry Thomas then gave us an illustrated talk on the fascinating subject of 'Fossil tree-ferns'. He showed us how the earliest land plants such as *Cooksonia* evolved within a short space of time to give larger descendants of which some started to grow upwards to exploit the advantages that size gave. The problems of recognising tree-ferns in the fossil record were outlined and the advantages of finding anatomically preserved stems stressed. The range of fossil remains of tree-ferns was reviewed from the Palaeozoic to the present day, including much new work published in the last few years. Two types of stem anatomy are known to have evolved several times in different families of ferns. The commoner type increases in size by dividing its vascular strand as is found in the Marrattialeans (known from the Carboniferous onwards), the Osmundaceae (that were largest in the Permian), the Cyatheaceae and the Dicksoniaceae. The other stem type (such as in some new Carboniferous petrified stems and in the Mesozoic *Tempskya*, although none are known today) was actually a series of interwoven stems and, like the other type, covered in a dense, supporting root mantle. Although rather different, both forms were strong and flexible. Visually, though, the two stem types were rather different. The commoner tree-ferns, that we all know, have a crown of fronds, but the others grew leaves along the lengths of their interwoven stems. We clearly do not know enough about tree-fern evolution yet, but Barry was optimistic that new discoveries would continue to increase our knowledge of it.

In his talk 'Tree-ferns growing outside in Britain', Alastair Wardlaw reported that tree-ferns have been grown in Britain since at least 1786. Only one, however, according to the *The New Atlas of the British and Irish Flora* (2002) has become established in the wild, and that is *Dicksonia antarctica.* Although the limit of latitude in which tree-ferns grow in the southern hemisphere is equivalent to the middle of France, in gardening we do not have the same constraints since we are not hostage to the prothallus stage and can even 'avoid' the early years of the sporeling's growth. As early as 1872, Arthur Smee was describing his cultivation in both pots and in open ground in London and this was at the time immediately before the Thames froze over in many winters. Alastair went on to describe a number of experiments that he had carried out to protect his plants in the Glasgow region. He had also measured the temperature inside and outside his various coverings as well as in the crowns of the plants and interpreted these temperatures in the light of any damage to the plants the following year.

A general discussion then ensued on the day's proceedings, when mention was made about the nature of hardiness of the southern-most colonies of the commonly grown tree-ferns and why it may not be possible to replicate these conditions in a typical northern hemisphere garden.

Our hosts for the day thanked our distinguished guests and were in turn thanked for organising such an informative and interesting day. About 65 people were counted at one point of the day, which is quite a large fraction of the inland membership.

REGIONAL MEETINGS 2003

LEEDS & DISTRICT

Moonwort Survey, North York Moors National Park – 24 May — Barry Wright

In keeping with our previous moonwort surveys in the North York Moors National Park, a loyal band of members assembled at the Danby Lodge visitor centre to be armed with GPSs, maps and clipboards. This was our third year of survey in this area. As before, we were to concentrate on roadside verge colonies of moonwort (*Botrychium lunaria*) and adder's tongue fern (*Ophioglossum vulgatum*). However, this year I had also requested information from the North York Moors National Park ecologist, Rona Charles, on the known whereabouts of moonwort. The intention was to attempt to relocate some of these during our 2003 survey. Within the area we had covered so far, a number of records required verification. One of these was very close to the Danby Lodge visitor centre itself at 45/72700.08500 and was soon confirmed at a triangular junction of roads on a steep sloping hillside at 250m altitude. We also studied the road running eastwards from this junction and northwards, uphill, and were pleased to record relatively abundant colonies of both moonwort and adder's tongue on both sides of the road. Interestingly, there were places where both species were growing very close together and almost certainly had their root systems intermingled.

From here we went up on to Beacon Hill to another North York Moors National Park record site at 45/73100.09800. We searched in the vicinity of this location and found no moonwort spikes at all. However, some of our search team did record it further north at 45/73017.09899 at an altitude of 270m and also, one eagle-eyed member found adder's tongue at 45/73347.09482. That took care of two of the records from the North York Moors National Park. We then returned to our original starting point of two years ago, the bridleway junction on Glaisdale Rigg at 45/72969.02854. This is almost becoming an annual pilgrimage for our group. Here we saw the usual extensive colonies of moonwort with the occasional adder's tongue thrown in for good measure. It was at this point that we realised that we were not going to get away without a good soaking from the variable northern weather. Just as we got out of the cars to look at the moonwort the heavens opened, and as soon as we got back in, it stopped. Typical!

As time was pressing on we decided that we were not going to be able to do any survey work in the morning, especially as the road ahead was blocked because of bridge repairs in progress. We had to backtrack all the way round to the Lion Inn (44/67870.99693) on the Hutton-le-Hole to Castleton road. In this way, we seemed to avoid the rain and were able to eat lunch in the open air.

After lunch we all dispersed to do our 'sections'. This extended survey work started in 2002 and looked at new areas that seemed likely habitats. The general impression was that the abundance of moonwort and adder's tongue spikes was generally less than in previous years and also that many of the spikes were relatively small, making life unusually difficult for the recorders. Some areas that seemed to be very promising were almost completely devoid of emergent spikes. This begs the question as to whether or not we were there at the right time of year or whether the 'organic mowing machines' (sheep!) had been let out early and had beaten us to it.

Another of the North York Moors National Park records was searched for at 45/69994.01902 but, despite diligent searching, not a single spike of moonwort was found. One of the more productive sections of road searched was between 44/69350.93180 and 45/67630.00560, although the best areas were above the 340m contour, between

44/68910.95290 to 44/68650.96760. There were sporadic colonies on the section 45/68250.02870 to 45/68260.04080.

It may have been the time of year and/or timing of the seasons, but it was looking as though we had exhausted much of the searchable area in the western part of the North York Moors National Park.

I had a chance encounter whilst driving across the moor tops between Leyburn and Grinton in Wensleydale and Swaledale respectively, when I was pleasantly surprised to find that, stopping at a typical moonwort site on the roadside, this species was indeed present. This set me thinking that it might be worth switching our attention to doing some surveys in the Pennine Dales using this road as a starting point. However, a number of our newer recruits to the group are quite keen to continue the work in the North York Moors National Park as well, and we may continue monitoring both areas over the next few years. So, if anyone wishes to dust off their 1960s anorak and would like to join us in 2004 then we can guarantee that you will find some moonwort and adder's tongue, but will also have the excitement of searching for, and hopefully finding, new sites.

Chee Dale, Derbyshire – 14 June **Paul Ruston**

Thirteen of us set off on a bright and cheery morning to complete what we began on our 2002 visit to this area. This did mean having to pass along part of the way previously seen, but fortunately we were able to add more fern species to those listed then, notably *Asplenium adiantum-nigrum* growing in the mortar of the station platform, and *Polystichum setiferum*, *Dryopteris affinis* subspp. *affinis*, *borreri* and 'morphotype *insolens*' growing in the steep and craggy wooded environs of the River Wye. Our progress, in uncharted country, alternated between the river and the Monsal Trail (formally the Manchester to London line), giving us a typical selection of calcicolous ferns on the cliffs and railway cuttings, for example *Gymnocarpium robertianum*, *Cystopteris fragilis*, *Polypodium vulgare*, *P. interjectum*, *Polystichum aculeatum*, *Asplenium ruta-muraria*, *A. viride* and *A. trichomanes* subsp. *quadrivalens*. *A. scolopendrium* was plentiful, occupying moist and shady areas. Enthusiasm over some very unusual *Cystopteris fragilis* with extremely enlarged and distorted pinnae was dampened when it was decided that this effect was the result of a fungal infection. An *Asplenium trichomanes* subsp. *pachyrachis*-type plant was seen nestling in a sheltered part of the rock-face (43/122728). It was about half a metre above the surface of the river and displayed fronds 20cm in length and pinnae up to 1cm long with crenately lobed margins. Samples were sent by Ken Trewren to The Natural History Museum (NHM) for verification of taxonomic status. When I returned at a later date to collect fresh material for the NHM I noticed, just a few metres distant, a second plant with fronds around 5cm long. The minute and overlapping lobed pinnae were extremely congested with sori; sample specimens of this were also sent to the Museum. Our morning excursion terminated where a very extensive and impressive colony of *Gymnocarpium robertianum* had colonised the lower areas of limestone scree under the crags and cliffs (43/116728). We saw here many flowering plants of Jacob's ladder (*Polemonium caeruleum*) and columbine (*Aquilegia vulgaris*). The higher scree supported an abundance of *Dryopteris filix-mas*. The south side of the valley was covered with bloody cranesbill (*Geranium sanguineum*), making an impressive splash of colour in the bright midday sunlight.

After lunch we took an easy stroll through Tideswell Dale and up into the disused Basalt quarry, now a picnic area (not a picnicker in sight) complete with a wood carving of a seated man (43/155738). It wasn't long before keen-eyed members found *Botrychium lunaria*; though smallish plants, they were plentiful among the milkworts and thyme. A perfect single flowering specimen of bee orchid (*Ophris apifera*) finished our day – on a non-ferny note. But then, who wants to complain!

Loftus, Kilton Beck and Rosecroft Woods, North Yorkshire – 12 July

Ken Trewren

Having suggested this outing at the previous year's AGM, I was horrified to discover during the course of a reconnaissance of the route a week before the scheduled date that the footpath had fallen into a state of neglect, being rather overgrown by brambles and nettles, and swept away by landslides in at least a dozen places (it was seven years since I had previously visited the area). A phone call to Barry Wright established that all of the known participants were fit, so it was decided that the outing should not be cancelled.

Five of us met beside the Reformed church in Loftus (45/718182) on a bright, sunny day. The church itself supported one of the highlights of the day – a population of *Asplenium ceterach* growing in the mortar of the glazed brick walls around the church. This is one of only two populations of the species in the North York Moors. The population was much reduced from when I had last seen it, due to cleaning of the walls, but there were still some large plants beside a drainpipe and smaller plants elsewhere. In addition there were a few plants of *A. trichomanes* subsp. *quadrivalens* and *Dryopteris filix-mas* and many plants of *Asplenium scolopendrium*.

From Loftus we walked along the road to the adjacent village of Liverton Mines, from where we descended steeply by a series of steps through Cock Shots Wood to Kilton Beck (45/706179). We passed some fine plants of *Polystichum setiferum* and *Dryopteris affinis* subsp. *borreri* on the descent, and also scattered plants of *D. filix-mas* and *D. dilatata*. Upon reaching the stream, we followed the path a short distance upstream, where there is a well-known stand of *Equisetum hyemale* – the second highlight of the day. This stand clothes the riverbank for a distance of about 100 metres and is estimated to cover an area of 1,500 square metres. Only five colonies of the species are known from the North York Moors, but all of the other colonies cover just a few square metres.

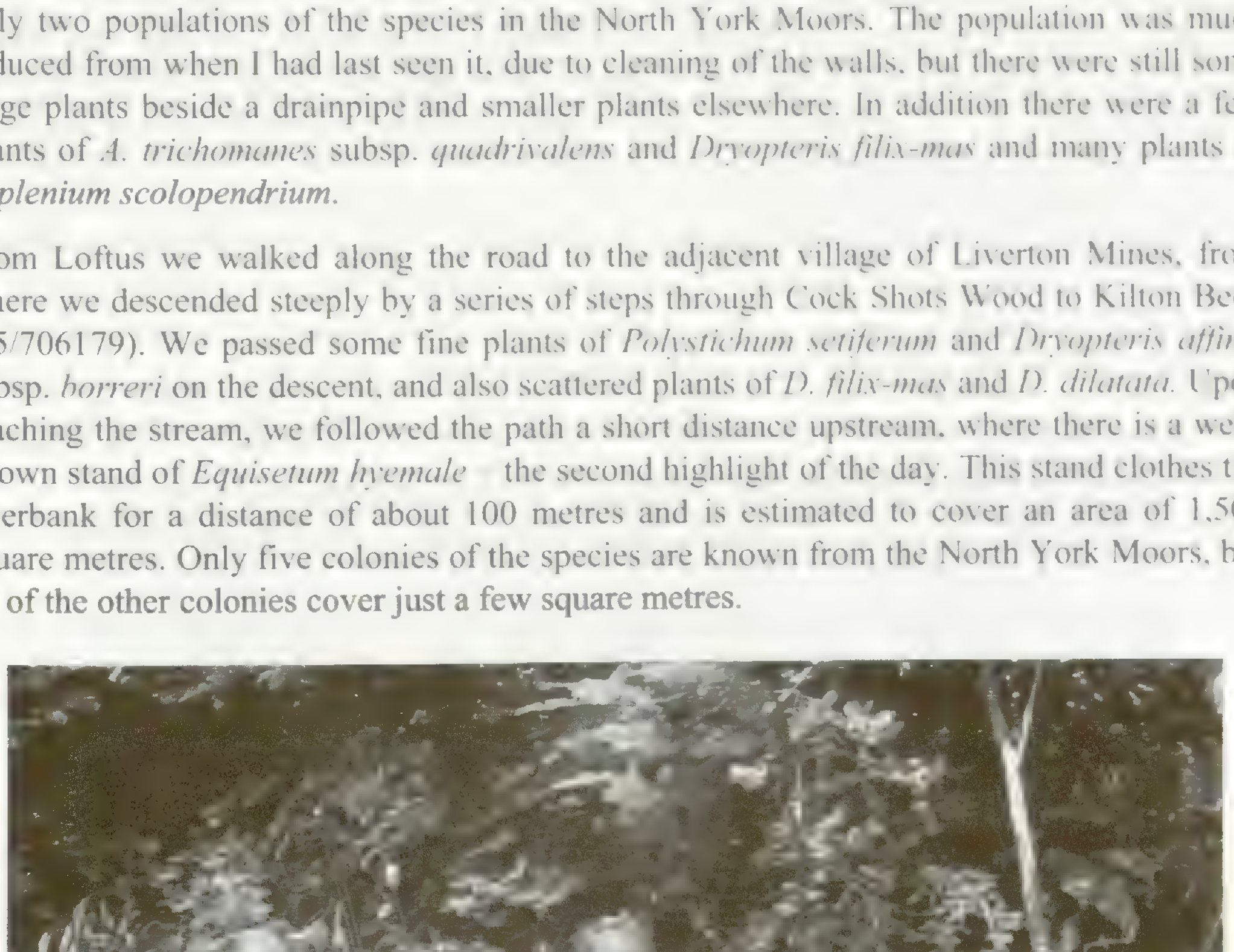

photo: B. Wright

Loftus, North Yorkshire

Neil Timm, Paul Ruston, Ken Trewren, Barry Wright & Bruce Brown

From this point we followed the footpath upstream for about three kilometres, through Mains Wood and Mill Balk Wood, at times crossing steep muddy slopes where the path had been swept away and pushing through overhanging brambles. In places, the fertility of the soil was indicated by the fact that the nettles were head-high. When we finally reached the road, the two brave (or foolish?) participants who were wearing shorts complained that their legs were 'tingling a bit', although, surprisingly, they seemed to have plenty of skin left!

Along the way we had seen *Athyrium filix-femina*, *Blechnum spicant*, *Dryopteris affinis* subsp. *affinis*, *Equisetum telmateia*, *Asplenium scolopendrium*, *Polypodium vulgare*, *P. interjectum*, *Pteridium aquilinum*, and more plants of *Polystichum setiferum*, *Dryopteris affinis* subsp. *borreri*, *D. filix-mas* and *D. dilatata*. Some of the colonies of *Equisetum telmateia* were magnificent and there were some particularly large plants of *D. affinis* subspp. *affinis* and *borreri* and four large plants of the hybrid *D.* x *complexa* nothosubsp. *complexa* (these having been confirmed by their abortive spores after the earlier reconnaissance). Most of the plants of *D. affinis* subsp. *borreri* were of the 'normal' type, but there were also a few of 'morphotype *insolens*', and a taxon that is common in the North York Moors that I have provisionally called '*foliosum*'.

The woods are also rich in the gametophyte stage of *Trichomanes speciosum*, and we inspected one large patch in a dark crevice in sandstone close to the footpath. There are many other colonies on rock-faces and under boulders throughout the wood, which has not yet been fully surveyed to determine whether or not sporophytes occur.

Just before reaching the road we came across a sign in the middle of the footpath, facing the other way, which read 'footpath closed'!

We followed the road through the village of Liverton, to Rosecroft Wood (45/717173), through which we followed a well-maintained track back to Loftus. Along the roadside we saw populations of *Equisetum arvense* and occasional plants of *Dryopteris filix-mas*. In Rosecroft Wood there were *Athyrium filix-femina*, *Dryopteris dilatata*, *D. filix-mas*, *Pteridium aquilinum*, and a particularly fine stand of *Equisetum telmateia*. There were also a few plants of a distinctive form of *D. affinis* subsp. *borreri*, and one plant that looked a 'dead cert.' for *D.* x *complexa* nothosubsp. *critica*, but which turned out to have mainly good spores.

We arrived back in Loftus in good spirits, having had a tiring but enjoyable day's outing, in fine weather and excellent company.

Muker, Swaledale, North Yorkshire – 9 August **Brian Byrne**

At the height of the record-breaking summer heat wave, ten members gathered in Keld (35/892010) to walk the spectacularly scenic section of the Pennine Way to Muker, and after lunch return to Keld on the riverside track, which with diversions was an estimated seven or eight miles. Out of Keld our route skirted the steeply wooded slopes of the gorge high above Kisdon Force on our left, with limestone cliffs on our right, that were surprisingly sparse in ferns, though at one spot small numbers of *Asplenium viride*, *A. trichomanes* subsp. *quadrivalens*, *A. ruta-muraria* and *Cystopteris fragilis* were found. Climbing gently, the path led us through a very extensive belt of *Pteridium aquilinum*, which fortunately for us was not shedding spores. In the occasional breaks in this blanket of bracken, thriving colonies of *Athyrium filix-femina* and *Oreopteris limbosperma* were seen. After we eventually emerged from the bracken, and still climbing, we began to encounter small pockets of scree, one of which had a single isolated plant of *Dryopteris submontana*, discovered on my 'recce' ten days earlier and refound to within one metre with my new WAAS-enabled (error-correcting) GPS receiver! This plant was 124m inside the 'NY' (35) 100km square. The main colony of *Dryopteris submontana* was only a short distance away

along the path, but inside the 'SD' (34) 100km square by just 30m, and in this instance on a narrow scree of highly mineralised mine waste that extended some way up the hillside, as did the fern.

Further on was a more extensive area of fern-rich natural limestone scree, which members fanned out across, finding *Gymnocarpium robertianum*, *Asplenium scolopendrium*, *Polystichum aculeatum*, more *A. viride*, *Cystopteris fragilis*, etc.

For some distance now we had been effectively walking the 400m contour with superb views of Upper Swaledale. At the next stile I pointed out the three large well-defined beds of *Equisetum* x *dycei* and other horsetail-rich areas across the river and 150m below us, which we would examine after lunch. Before moving on we briefly looked at some inaccessible polypodies on the cliff above us, at least one of which through binoculars was considered to be possibly *Polypodium cambricum* with its wider fronds, pointed pinnae and some fronds just expanding. But as we couldn't prove this we walked on. With the temperature now very high and no shade or respite in sight, our thoughts must have collectively been homing in on the prospect of the pub, drink, lunch and rest out of the unremitting ferocious glare of the sun, as we paid scant regard to a particularly promising ferny site with some excellent plants of *Polystichum aculeatum* and some very large *Dryopteris* specimens well before we started the steep decent into Muker. Reaching the village we noted *Dryopteris dilatata* and *D. filix-mas* outside the vicarage and paused just long enough to confirm *Polypodium vulgare* at eye level on a wall by the dark brown annuli on the sporangia, before arriving with relief at the pub.

photo: A.J. Evans

Muker, Swaledale

Paul Ruston, Martin Harrison, Sylvia Martinelli, Brian Byrne, John Wilson

After lunch, with the temperature still rising, eight of us set off to examine the horsetails. The interesting ones were essentially concentrated into a half-mile stretch on the east side of the river and very close to the stony track to Keld. *Equisetum palustre* generally predominated and in the wetter areas various *polystachion* forms were readily found. *E. arvense* and *E. fluviatile* were also present in small scattered colonies as were two of the

three possible hybrids between these three horsetails, *E.* x *dycei* and *E.* x *litorale.* But the star attraction here was the three large wet beds where *E.* x *dycei* was totally and unambiguously the dominant vegetation, the area of effectively pure *E.* x *dycei* being approximately 1,500 square metres. It is clearly not of recent origin at this site, and in the ten years since I found it I've concluded that it has to be of some considerable antiquity. The amazing variability in the branching was noted and the opportunity taken to demonstrate the differences between the two hybrids, including my pure tensile (i.e. no bending) breaking strength test to differentiate between them.

At this point the group's 'breaking strength' was tested, and our number reduced to five (all masochists?) to make our way back to Keld on foot. But the going was easy enough until we reached Swinnergill, where we examined a very severely drought-affected small colony of *Asplenium ceterach* on the trackside wall. From this point we felt a close bond with the colony as most of us had by now consumed all the liquid we had carried and on the steep climb towards Beldi Hill began to feel the wilting affect of dehydration ourselves. It was a struggle, our progress reduced to a slow crawl with frequent stops, but we made it! The ledges on the cliff at Beldi Hill (35/902011) supported a colony of *Dryopteris submontana* that was out of reach of grazing animals, and those at eye level were ideal for photography or for close examination of the entire plant. From here it was mostly downhill to Keld, but we were in no state to look at the ferny areas in the vicinity of the bridge over the river. With enormous relief and totally exhausted, we reached Keld to find the square full of Paramedics and Mountain Rescue teams. Thankfully we had not needed help from these emergency services.

'Fern Day' – Londesborough Cross, Shiptonthorpe, North Yorkshire – 30 August

Barry Wright

At the suggestion of local group member Sylvia Medd, she and I decided to put on a Fern Day for our group and also for any of the visitors that Sylvia has to her 'Yellow Book' garden openings. Sylvia is a particularly enthusiastic and accomplished grower of ferns and has an extensive collection in her beautifully laid out garden. This includes a large stumpery under the shade of trees, ferns in borders and a shade-house. She propagates ferns for sale at the open gardens and has many visitors taking advantage of the varieties that she is able to offer. We both felt that there is an increasing interest in fern culture and that many of her visitors, as well as some of our members might benefit from a workshop dedicated to the culture and propagation of ferns in the garden. We elected to run the half-day session split between a tour of the garden and workshops. At the end of the day we also offered for sale ferns from both of our gardens. Although we had to make an entry charge to cover costs we were able to make a donation to local group funds. We provided two booklets, one on the selection of ferns for different situations in the garden and one on the different techniques of fern propagation.

As part of Sylvia's normal operation she has a large marquee that is normally used for serving the refreshments in at her open gardens. We estimated that this might, at a pinch, hold 40 people. As it happens, we sold 27 tickets and this was cosy enough for those that came along. Thankfully it didn't rain and we could have the marquee sides open.

We began with a session looking at the full range of propagation techniques that we were aware of, including crown division, dividing rhizomes, growing frond bulbils, culturing bulbils from frond bases in *Asplenium scolopendrium*, and finally growing from spores. We then broke for refreshments before dividing the group into two parties to give them a guided tour of Sylvia's fern collection.

At the end, the hoard of locusts descended on the sales benches and went away clutching many treasured ferns that they knew where to place in the garden and how to propagate in the future. All in all this seemed to be a successful day, with many positive comments from

local group members and others that attended. We are considering holding the same event next year and advertising to a different group of people such as local garden clubs and horticultural colleges. My thanks to Sylvia for all the extra work she had putting up the marquee and preparing for the day. I just turned up and wandered around a bit talking about ferns – such hardship!

Ingleborough and Trow Gill, Clapham and Gordale, Malham, North Yorkshire – 20 September

Bruce Brown

Ken Trewren devised this *Polypodium* day but in the event was unavoidably abroad on business, so Barry Wright, with Ken's notes in hand, took up the reins. Eleven of us left Clapham car park (34/745692) and started by exploring the village polypodies. We had a relatively slow start as a we were waiting for some late arrivals as a result of the closure of the A65 at Hellifield. Road closures have been a bit of a problem this year! By the side of the beck and along the adjacent roadside walls were a number of *Polypodium interjectum* colonies. Further up the village, the churchyard walls were mostly adorned by *P. vulgare*. *Asplenium trichomanes* subsp. *quadrivalens* was also common.

We paid the small toll charge to enter the grounds of the Ingleborough Estate (once the home of plant hunter and explorer Reginald Farrer) and followed the scenic track through woodland alongside Clapdale Lake (34/748695), and passed the Ingleborough Show Cave. Less basic soils along the lakeside were indicated by the presence of *Pteridium aquilinum*, *Athyrium filix-femina* and *Dryopteris dilatata*, and the *D. filix-mas* was gradually replaced by the more robust crowns of *D. affinis* subspp. *borreri* and *affinis*. Limestone took over as we climbed up to a high, arched man-made shelter. *Cystopteris fragilis* appeared here, along with *Asplenium scolopendrium*, *Polystichum aculeatum*, plus some luxuriant *Asplenium ruta-muraria*. Just beyond the show cave we looked hopefully for *Selaginella selaginoides* around a bubbling tufa flush (34/754711), but could only find a few 'tatty' specimens of *Equisetum arvense*.

The dry valley turned westwards to enter the confines of the impressive limestone gorge of Trow Gill (34/755716). Along the southern side and above the crags were good colonies of *Polypodium cambricum*, accompanied by a few *P. vulgare*. The path climbs to the top of the gorge and on a slightly higher limestone outcrop some *Asplenium viride* were spotted. With lunch-time almost upon us, we had to make a quick march back down to Clapham, but made time to admire the thriving *Asplenium ceterach* along the walls in the village by the Ingleborough Estate offices.

It took half an hour to drive along the narrow, winding dales roads into Malham to continue the next part of Ken's itinerary. A few less in number now, we managed to squeeze into one car and park at Gordale Bridge. Our destination was the rocky dry valley nearly one kilometre to the west (34/907637). A number of polypodies were encountered here, some being rather puzzling. One healthy clump on the east side of the valley was identified as *Polypodium interjectum*, but other colonies high up on the west side were more variable. Of greater interest was one clump with strong *P. cambricum* attributes growing on a south-facing limestone crag, athletically reached by Barry courtesy of a convenient ash tree. It was now getting late and the weather was starting to deteriorate, so we called it a day.

A microscope check on the above specimens was carried out later, and both the Gordale and Trow Gill *P. cambricum* showed the presence of paraphyses, but the sori were otherwise too immature for any more analysis. The other Gordale polypodies were generally sterile with shrivelled sporangia and misshapen unripe spores; the number of indurated cells varied widely from 8-14 and basal cells 1-2 – so the hybrid *P.* x *mantoniae* was suggested, however, the abundant paraphyses and lack of *P. vulgare* in the area are more indicative of *P.* x *shivasiae*.

All in all, it had been a most interesting *Polypodium* day.

SOUTH-EAST

Dartford Area, Kent – 28 June

Pat Acock

We met our host for the day Jack Hubert and his daughter Kate at Shorne Wood Country Park (51/684699) between Gravesend and Rochester. The woods are predominantly on the poorer soils of the Blackheath Beds and Thanet Sands but there is some leaching of minerals from the higher Upper Chalk. The wood had an interesting ecology, although the number of species of ferns was small. However, we were able to show one or two of our newer members the differences between *Dryopteris filix-mas*, *D. dilatata* and *Athyrium filix-femina* and were able to test them later with the same species.

After lunch at the Wheatsheaf and a visit by a few 'anoraks' to look at the new Channel Tunnel Link over the old Gravesend West Branch Line, we moved on to Beacon Wood Country Park (51/593716). Here the Wealden Clay had been removed through the last two centuries for the brick-making industry. On the poorer soils below, as at Shorne Woods, an interesting mix of aspen, birch and moss dominated the central section. However, the disintegrating concrete structures had been colonised by *Polypodium interjectum* and *Asplenium scolopendrium*, and *Equisetum arvense* put in an appearance in the wetter area.

Living so close to the Bluewater Shopping Centre, Jack had taken an interest in the planting up of the periphery. Bluewater was built in a huge abandoned chalk quarry. This was our next port of call, as to Jack's great surprise they had chosen to plant swathes of ferns among the other plants. On a dry chalk bank had been planted a mass of *Thelypteris palustris*. It was alive. One can only speculate on whether or not it will remain so and colonise further. Beyond this was a mass of *Polystichum munitum* and then various groups of varieties of *Polystichum setiferum*, *Dryopteris filix-mas* and *D. affinis*. Among them were a few *Blechnum spicant*, which did not look happy. The greatest groupings were of *Osmunda regalis* and *Polystichum munitum*. We will have to monitor these ferns to see if they can become established, especially as they have had the poorest of starts with a particularly dry spring and have been planted on top of chalk.

To round off the day, Jack's wife, Joan, had prepared a superb cream tea, which we enjoyed while looking at Jack's ferns around the garden and under his slatted shading. Under the slats Jack's plants grow exceptionally well and this is an excellent way of keeping the effects of the midday sun to a minimum. We also delighted to see how he raised ferns from spores and developed the sporelings to maturity.

Many thanks to Jack for a most interesting day.

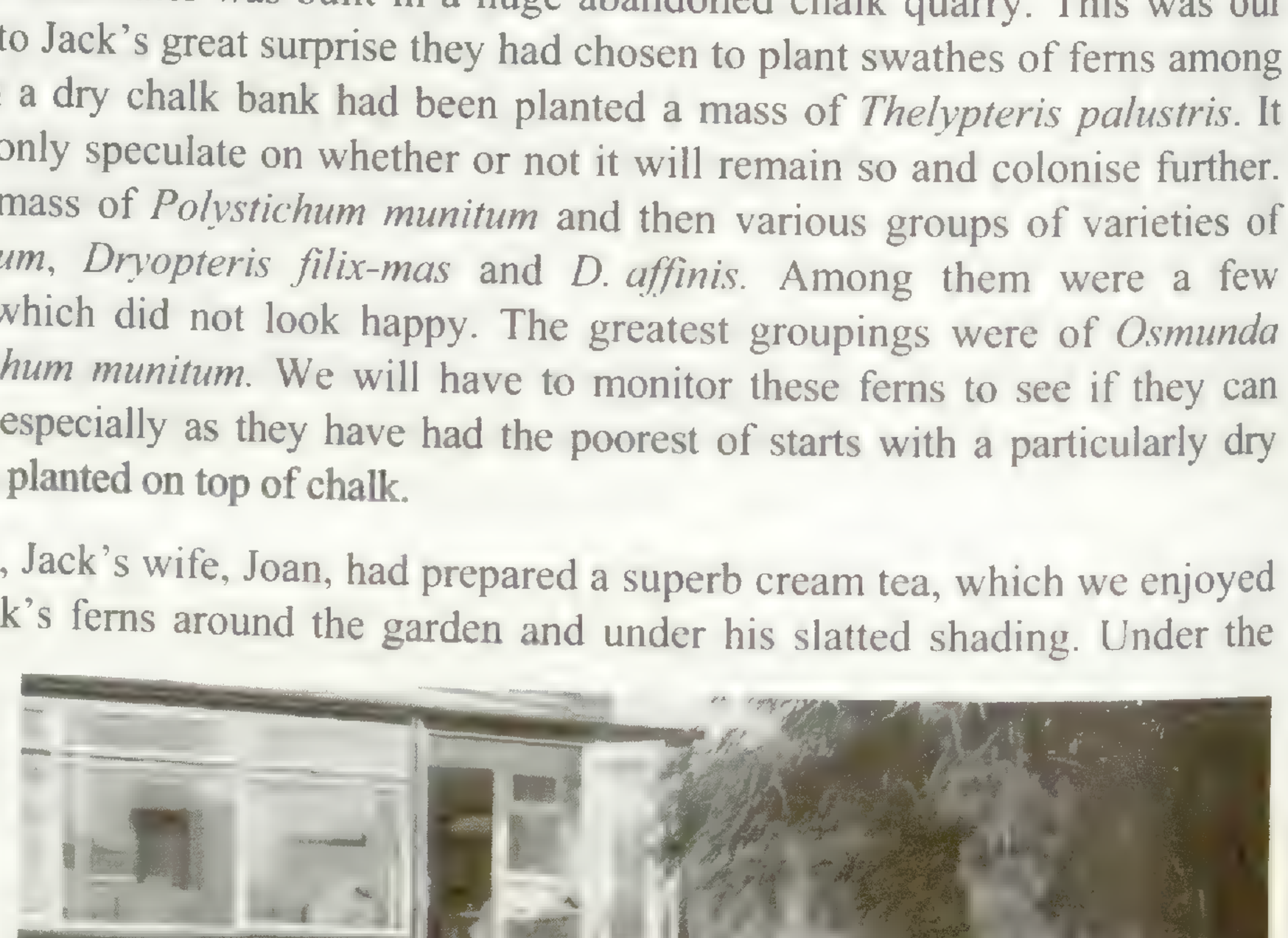

photo: J. Hubert

Karen Munyard, Kate Hubert, Pat Acock, Jennifer Ide, Rosemary Powis, Ken Hill, Steve Munyard & Peter Clare in Jack Hubert's garden

Winchelsea and Hastings, East Sussex – 12 July

Mark Border

On a hot and sunny day, twenty members from the South-East and East Anglia groups met at Winchelsea. Some new local members who were attending their first field trip were also welcomed.

The group eventually started (several members were delayed by a major accident on the A21) at the wall just south of the church (51/905174), examining the colony of *Asplenium ceterach* – the most easterly known. The recent hot weather had caused a number of the plants to curl up, but several of the more shaded were still 'open'. We then moved into the church grounds, primarily to see the *A. trichomanes* subsp. *quadrivalens*. Steve Munyard, our leader, was able to show the distinguishing features of this subspecies. Growing with these plants were *A. ruta-muraria*, *A. scolopendrium* and *A. adiantum-nigrum*. The wall surrounding the church was next visited, to see the many plants of *Polypodium cambricum*. Unfortunately, the site of the hybrid *P.* x *shivasiae* is now in private hands.

From Winchelsea a sizable convoy moved to the outskirts of Hastings (51/850149), to see the adder's-tongue, *Ophioglossum vulgatum*. In spite of it being rather late in the year, a number of plants were found growing in the hedgerow under very dense herbage. All the plants were very etiolated, but two had produced fertile fronds. Quite what the many passing drivers on this main road out of Hastings were making of us all on our hands and knees, peering into the hedgerow, is anyone's guess!

Our next stop was Rotherview Nursery (51/828137), where they had recently received a new delivery of ferns. *Woodsia obtusa* was probably the most popular purchase although we also cleaned out their entire stock of *Matteuccia orientalis* – large plants, a couple with a *Lunathyrium* growing as a weed in the pot, one of which is now planted out in my garden – thanks to Steve for spotting them.

Lunch was next on the agenda, many of the group having sandwiches on the Fire Hills at Fairlight. We then re-gathered at the entrance to Ecclesbourne Glen (51/839105), having been joined by a couple of the Hastings Rangers, as this area comes under their jurisdiction and they were keen to add to their knowledge of the plants under their control.

Our first task here was to try to re-find the *Oreopteris limbosperma* plants that Steve had found some years earlier. Sadly, the original plants had been lost to 'path improvements', a few years ago. Unfortunately no further plants were found. As we followed the path down the valley many plants of *Asplenium scolopendrium* and *Polystichum setiferum* were seen. The aspleniums showed much variation in frond width and undulation although not as much as can be seen in the next glen. A large plant of a stunted *P. setiferum* was spotted, which caused much discussion as to whether it was a variety or the result of insect damage. Several similarly stunted young plants were also found in the vicinity, which moved most people to conclude 'variety'. Other pteridophytes seen included *Equisetum telmateia*, *Athyrium filix-femina*, many *Dryopteris dilatata*, surprisingly few *D. filix-mas* and *D. affinis* and a couple of small *Blechnum spicant*. *Pteridium aquilinum* covers large areas of these glens.

The day concluded with a visit to Steve and Karen's home for refreshments and a tour round their ever-changing but always fascinating garden. For anyone who has not yet been fortunate enough to visit, it is a true plantsman's garden. Some of the newer members were able to see at first hand the differences between *Polystichum setiferum* and *P. aculeatum* and between *Dryopteris dilatata* and *D. carthusiana*, hopefully before they were too overawed by the rest of the collection.

Several members had to leave the garden early, which was unfortunate as it meant they missed one of the highlights of the day, the now almost traditional evening refreshments; again Karen managed to keep to the very high standards enjoyed at previous visits. Several

members raided Steve's garden, armed with very large plastic bags – purely to give him more growing space of course, and this completed the usual plant swaps!

All in all, a wonderful day organised with Steve's usual skill and topped off with Karen's refreshments. Many thanks to them both.

Southborough Common, Tunbridge Wells, Kent – 11 October **Pat Acock**
(Leader: Peter Clare)

Eighteen of us gathered on this truly glorious autumn day for our end-of-season field meeting and evening slide-show.

After giving us an initial description of the area, Peter led us through Whortlebury Wood to Birch Wood (51/570433). Here we were able to remind newer members of the characters of the most common British ferns, as we saw *Dryopteris filix-mas*, *D. dilatata* and *Athyrium filix-femina*. Then came the problems. We found *Dryopteris affinis* subsp. *borreri*. Amongst the plants were some very large ones that had a lot of the characters of the afore-mentioned but also some of the characters of *D. affinis* subsp. *affinis*. Much discussion followed.

photo: J. Hubert

Tim Pyner, Andrew Leonard, Paul Ripley, Peter Clare & Steve Munyard examine *Dryopteris affinis* on Southborough Common

We left Birch Wood and headed back via some splendid high weald scenery to the main wooded area of Southborough Common, Whortleberry Wood (51/574428). Here we saw *Dryopteris filix-mas*, *D. dilatata* and *Athyrium filix-femina*. Whilst circumnavigating the wood we found patches of *Equisetum arvense*, *E. fluviatile* and *E. telmateia*. Still further into the wood we found a solitary plant of *Osmunda regalis* and also of *Polystichum setiferum*. The latter was precariously situated low down on the stream bank.

Following varied lunch-time arrangements (it really was wonderful to be sitting so comfortably outside in mid October), we reassembled on the east side of the common to walk along the ridge to see a few mature specimens of *P. setiferum* in Coneyburrow Wood (51/581428) above 'Hilly Fields'.

Retracing our steps, we went on to Brokes Wood (51/590425) with kind permission of the owner, Mr P. Marshall, who was using it as a nature reserve. Here we were again to see *P. setiferum* but also one specimen of *P. aculeatum*. Near the lake a very large specimen of *Equisetum arvense* with many secondary branches was seen, and to the north of the lake one plant only of *Dryopteris carthusiana*. In the northern side of the lake stretching out into the water we were able to confirm a large stand of *Equisetum fluviatile*, speculated upon from the other side a few minutes earlier. Further large specimens of *Dryopteris affinis* were observed as we made our way to Peter's house in Southborough to enjoy the ferns in his garden over a superb cream tea laid on by Gill Clare.

Following this we made a quick dash to Paul Ripley's garden north of Tonbridge, in the hope that we might see a few ferns before it was too dark. We barely made it and it was virtually dark when we returned to the house for another cream tea provided by Linda Ripley. Steve Munyard opened book sales and we looked at part of Jennifer Ide's collection of fern cards.

The slide-show included Tenerife by Andrew Leonard, a miscellany by Howard Matthews, Tenerife by Paul Ripley, and slides of the newly found *Asplenium ceterach* of Essex plus a couple of Cuba from Tim Pyner.

EAST ANGLIA

Indoor Meeting, Little Thurlow, Suffolk – 26 January — Marie Winder

Ten members and friends gathered at the home of Mary Hilton to hear another of our members, Mary Ghullam, tell us about her recent visit to Australia, where she worked at a research centre on Kangaroo Island, Australia's third largest island, about 150km long. She told us how her adventures started on arrival at Adelaide where she had time to visit the Botanic Garden before flying on to Kangaroo Island. She became so engrossed in the ferns in the fern house that she failed to realise it had been locked and that the botanic garden itself was in the process of being locked up for the night. She and another 'prisoner' were eventually rescued and able to return to the airport in time to catch their flight.

The research centre was a camp, set in *Eucalyptus* scrub, run by an organisation called Earthwatch, which was not only interested in the local ecology but also in sustainable living with as little adverse effect on the environment as practicable. Water was a limiting factor with an annual rainfall of about 22 inches, interestingly, much the same as Little Thurlow! Mary was assigned to work on short-beaked spiny anteaters (echidna), which were very elusive, emerging from their burrows at night and difficult to track even when fitted with radio transmitters. She also helped with work on a local monitor lizard, Rosenberg's guana. Mary concluded the Australian part of her talk with slides, some showing magnificent tree-ferns in Victoria, and maps, photos and various artefacts.

After the scrumptious refreshments that have come to be associated with the January meeting, we had time to chat and look at 'ferny bits' brought by various people e.g. scrap books, journals and a piece of jet carved with a 'beach' [sic] fern by a member.

Mary then told us about a six-day tour of Tasmania, starting from Hobart, that she made before returning home. She showed pictures of tree-ferns, some with filmy ferns growing on them, various *Blechnum*, and sea spleenwort growing near a former penal colony. We got the impression that Tasmania was not preserving its forests as they would like us to believe, as Mary said she had seen trainloads of forest timber.

On her way back from Tasmania she visited Melbourne's botanic garden. In the fern gully they have considerable trouble with flying foxes; their droppings pose a health hazard and are killing the ferns. Mary was so engrossed in the ferns and their problems, that she again almost missed her flight!

Her talks provided a fascinating insight into Australia and Tasmania, their flora and fauna. We will now all be very wary when visiting ferny areas of botanic gardens!

Holt Lowes and East Ruston Old Vicarage, Norfolk – 17 May Barrie Stevenson

Simon Harrap, a Trustee of Holt Lowes, met us at the car park (63/083375) and gave us a brief history of the site, a Registered Common since 1810 and an SSSI since 1953. From the car park he led us along a wide pathway through mixed woodland where we found *Dryopteris filix-mas*, *D. dilatata* and *Pteridium aquilinum*. We shortly arrived at Holt Lowes, an open, shallow valley, spring-fed and constantly boggy, the excess water draining into the River Glaven. The site is a mixed mire, both acid and alkaline conditions existing in close proximity, resulting in a rich and diverse flora.

At the edge of the bog we immediately found a good stand of *Thelypteris palustris* growing with round-leaved sundew and cottongrass. *Equisetum palustre* occurred in less water-logged areas, as did *Athyrium filix-femina*, while heath milkwort, with flowers from deepest blue to palest pink, scrambled across grassy tussocks. The site supports a large tally of mosses, with 17 types of *Sphagnum* alone having been found here. We were pleased to find *Hookeria lucens* beside a trickling streamlet, a rarity for the east of England. The first discovery of this moss by W.J. Hooker was at this site in 1807. We found *Equisetum sylvaticum*, its only site in East Anglia, and at the edge of the woodland and on marshy slopes occurred *E.* x *litorale*, previously unrecorded in Norfolk. *E. arvense* and several specimens of *Blechnum spicant* grew in the shade of trees.

As we returned to the car park through relatively dry woodland we noted *Dryopteris affinis* subsp. *borreri* and *Polypodium interjectum*.

We then drove to the Old Vicarage, East Ruston, a superb garden set in flat and featureless farmland only one and a half miles from the north-east Norfolk coast. The garden, begun in 1988, has been ingeniously designed and is enclosed by belts of trees that act as protective windbreaks. The interior is divided into enclosed gardens and alleys by means of hedges and walls. These, together with excavated and raised areas, have achieved total protection against strong winds from the sea, the proximity of which results in shorter, less severe frosts in winter. At the edge of the car park we found *Equisetum hyemale* subsp. *affine* and, moving towards the Old Vicarage itself, we found the main area of ferny interest, a sheltered, shady site to the north of the house. Here were plantings of *Blechnum cordatum*, *Cyrtomium fortunei*, *Onoclea sensibilis* and *Polystichum munitum*, as well as *Dryopteris linearis* and cultivars of *Asplenium scolopendrium*. The outstanding group of well established *Dicksonia antarctica* made a superb sight, the new growth kept constantly moist as a result of a hidden narrow tube that carried water behind each plant from below ground to the crown.

The vast, varied spaces of the garden, the names of which only hint at their plantings (for instance Exotic Garden, Mediterranean Garden, New Zealand Garden and the Californian Border and Desert Wash) make this a very special garden; an excellent visit indeed.

Cambridge Botanic Garden, and Honeysuckle and Willow Cottages, Cowlinge, Suffolk – 22 June

Geoffrey Winder

It was a pleasant Sunday morning when seven members and friends met at the entrance to Cambridge Botanic Garden, the venue of two recent BPS annual general meetings. The plan was to explore the Garden, particularly the ferny parts, and then to have a look at the various ferns growing in the glasshouses. Of course, at this time of year ferns and other plants are much more luxuriant than in March, the month when the AGMs were held.

The path from the entrance led past a stream, along which grew *Matteuccia struthiopteris*, into an area of woodland and bog gardens, the latter bordering a lake. Ferns seen included several forms of *Dryopteris affinis*, *Athyrium filix-femina* and *Polystichum setiferum*. There were several impressive stands of the great horsetail, *Equisetum telmateia* in moister areas, also *Onoclea sensibilis* and *Osmunda regalis* growing at the edge of the water. To the east of the lake were limestone rock gardens with narrow shady ginnels, the walls rich in shade-loving plants including ferns. In the more open areas grew ferns such as *Polystichum setiferum*, *Dryopteris filix-mas*, *Asplenium scolopendrium* and *Phegopteris connectilis* and, of course, a plethora of flowering plants including the broom-like *Ephedra*.

Growing in the mortar of the outside of the brick base of the first glasshouse was *Polypodium vulgare sensu stricto*, and nearby, in the mortar and neighbouring soil, various *Asplenium scolopendrium*. Ferns in the cooler glasshouses included *Asplenium oblongifolium*, *Polystichum setiferum*, *P. proliferum*, *Nephrolepis cordifolia*, *Dennstaedtia punctilobula*, *Blechnum chilense* (now sometimes referred to as *B. cordatum*, but labelled *Blechnum magnamicum* [sic] – presumably in error for *B. magellanicum* with which it is often confused) and *Psilotum nudum*. Interestingly several wood anemones were growing in full sunlight on the glasshouse bench. Ferns in the warmer houses included *Cyathea* sp., *Cibotium glaucum*, *Aglaomorpha coronans*, *Acrostichum* sp., *Davallia pentaphylla*, *Microsorum punctatum*, *Aglaomorpha* (*Merinthosorus*) *drynarioides* (growing on tree roots), *Adiantum hispidulum* and *Lygodium microphyllum* (growing on a wall and a little worse for wear).

Behind the main glasshouses, a few *Dicksonia antarctica* in pots outside the door, was a fern house. In it were pots of *D. squarrosa*, *Dennstaedtia bipinnata*, *Nephrolepis exaltata* 'Whitmanii', *Adiantum raddianum* 'Waltonii', *Woodwardia orientalis* and *W. radicans*. Filmy ferns were represented by *Trichomanes speciosum*, its variety *cambricum*, and *Leptopteris hymenophylloides*, the crepe fern from New Zealand looking rather like a small tree-fern.

In the afternoon we drove to Cowlinge in Suffolk. Nearing the village, we stopped in a lane to look at the flora of the wide verges that have never been treated with herbicide; in the past cattle were grazed there but more recently a single cut for hay has been taken each summer. No ferns, but they were rich in flowers such as the ox-eye daisy and various vetches and grasses including *Briza media*. A single specimen of the relatively rare sulphur clover (*Trifolium ochroleucon*) was found.

Finally we visited two cottage gardens in the village – the first a delightful sheltered garden belonging to Pam and Tony Couch, much of it developed from land that had become overgrown. The garden, quite large and with plenty of shrubs, bushes and medium-sized trees to provide shade and shelter, seems ideal for the many ferns being planted there – if there is enough moisture. The second garden, that of Barrie and Rosemary Stevenson, is smaller, but well planted with an interesting collection of established shrubs and small trees providing shelter for each other and for more delicate or herbaceous plants. Ferns are abundant and Barrie's collection includes interesting varieties of *Polystichum setiferum* and *Athyrium filix-femina*. Barrie is particularly interested in cristate and similar forms. A feast provided by Rosemary completed a full and interesting day.

Kersey's Farm, Mendlesham, Suffolk – 26 July **Barrie Stevenson**

At the kind invitation of Anthony Pigott, we joined members of Suffolk NCCPG for an afternoon visit to his National Collection of *Equisetum*.

We gathered in a barn beside the house where we found a display of literature, and welcome refreshments provided by Margo. Here Anthony treated us to an introductory talk, illustrated with his own slides supplemented by some taken by Howard Rice to accompany an article on *Equisetum* for the RHS journal *The Garden*. Anthony's inevitable opening remark concerned the reaction of the general public when confronted with his Collection at shows: "Why do you collect them? I'm trying to get rid of mine!" In fact, Anthony's contention is that though *Equisetum arvense* is a troublesome weed, most horsetails are little trouble in the garden. However, popular gardening programmes on television appear to have no common policy. Chris Beardshaw recommended *E.* x *bowmanii* for a junior school garden, while film of the RHS garden at Rosemoor showed staff waging war against all horsetails.

Anthony's own interest in *Equisetum* began as a result of seeing a particularly fine stand of *E. telmateia*. Today's horsetails are of ancient lineage and the structure of modern plants is little changed from the 30-metre tall specimens dating from the Triassic period.

Horsetail rhizomes can penetrate three to five metres and are therefore able to draw water from subsoil although top growth is apparently in dry ground. Top growth dies back as a result of frost but spores are produced and may be grown in the same manner as fern spores. However, *Equisetum* spores are viable for only a few days and should be sown as soon as possible after production. They must have moisture and sunlight to achieve germination. Hybrids are quite common in the wild, but produce no good spores.

Some horsetails are becoming popular as garden plants, and Anthony mentioned particularly *E. sylvaticum*, *E. hyemale* subsp. *affine*, *E. scirpoides*, *E. ramosissimum*, *E. variegatum* subsp. *alaskanum* and *E.* x *bowmanii*. Enlightened Victorian gardeners grew *Equisetum* and Anthony quoted Shirley Hibberd, who in *The Fern Garden* (8th Edition, 1879) wrote of Equisetum: "*I have all the species that are known and one of them I consider the most elegant of all plants ever seen upon the face of the earth. This gem is called* Equisetum sylvaticum."

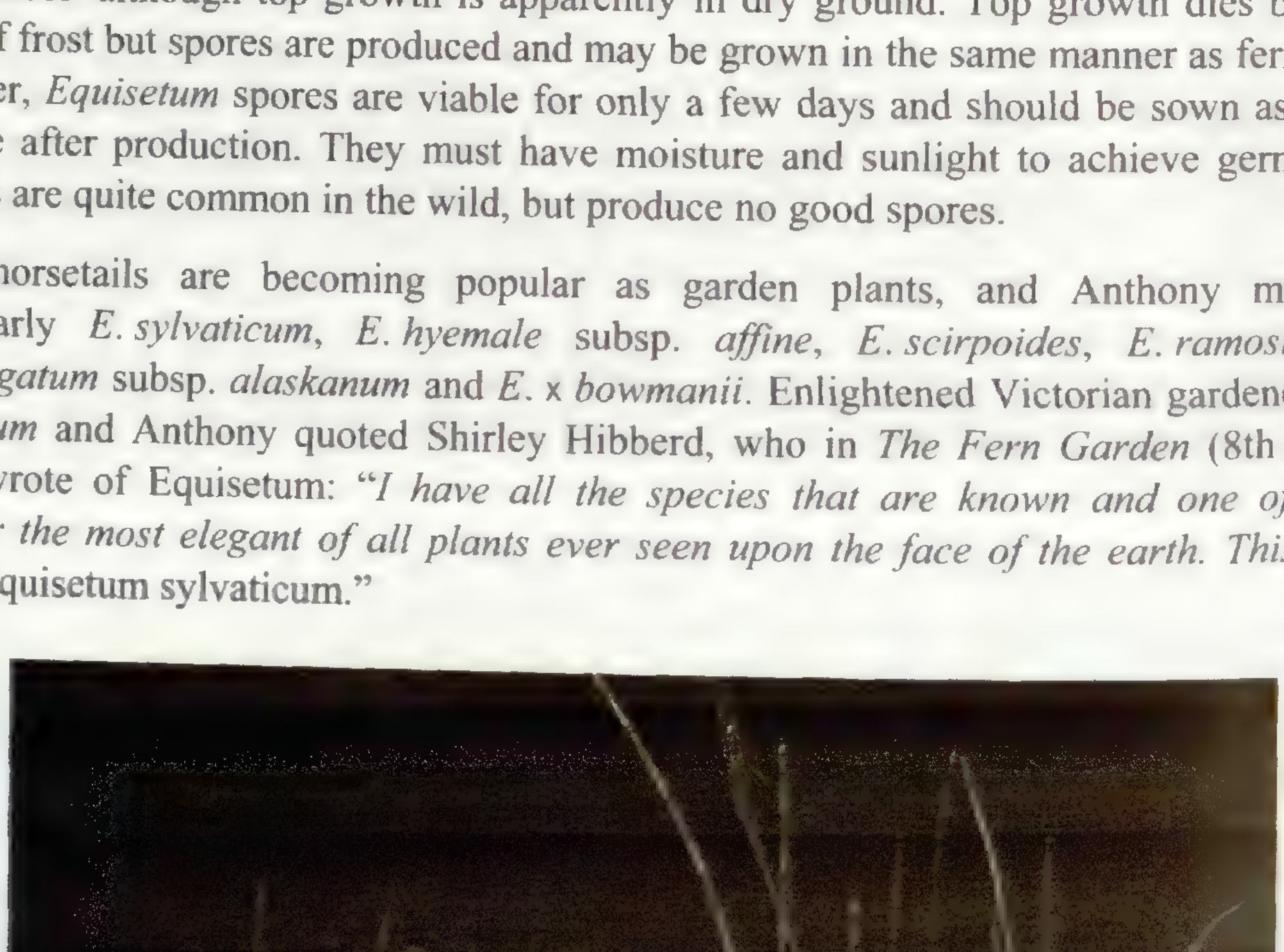

photo: H. Matthews

***Equisetum* x *litorale*, *E.* x *bowmanii*, *E. sylvaticum*, *E. telmateia*, *E. hyemale* subsp. *affine*, *E.* x *moorei*, *E. hyemale* subsp. *hyemale* in Anthony Pigott's garden**

Anthony grows his collection in pots standing in trays of water. They are equally happy in sunshine or shade. His potting mixture consists of equal parts of loam, sand and a peat-like substance, with the addition of a little pure clay that provides free silica. He propagates from sections of rhizome that have at least one visible bud at the node.

We took the opportunity not only to visit the *Equisetum* Collection but also to view Anthony's fine collection of ferns, containing many species besides the inevitable variations of *Dryopteris affinis*.

Our thanks go to Anthony and Margo for hosting a most enjoyable visit, with particular mention of Margo's splendid refreshments and her kindness in producing copies of a family recipe for her particularly delicious fruit cake.

End of Season Meeting, Barrow, Suffolk – 2 November — Barrie Stevenson

At the time of writing we are still able to look forward to our final meeting of 2003. Making our annual visit to the home and garden of Marie and Geoffrey Winder, we shall be able to view slides and photographs of the past season's visits. There will be a display of Victorian New Zealand fern albums and associated reference books, and a video and CD-Rom of New Zealand ferns. The meeting will conclude with a bring-and-buy fern sale and the consumption of our traditional splendid end-of-season refreshments.

NORTH-WEST

Pre-season Meeting, Kendal Museum, Cumbria – 8 March — Frances Haigh

Kendal Museum (34/518932), founded in 1796, holds good collections of flora and fauna, both local and global. Included are several fern collections and it was to view these that 23 members met for a pre-season meeting.

The herbaria we examined, compiled by Clowes, Barnes, Martindale, Stabler and Pinder in the mid to late 19th century, were mainly of specimens found in the Lake District or around Kendal, especially from the limestone districts. However, a few foreign examples were included. Apparently enthusiasts enjoyed swapping their duplicates to build up their folders. Amongst the specimens, some of which had become quite fragile with age, were many varieties of '*Polystichum angulare*' (= *P. setiferum*). Such variation is rarely found nowadays in the wild. Fern enthusiasts were also avid collectors! There were comments on the sheets that some ferns, e.g. *Asplenium septentrionale* from Borrowdale, were becoming rare and that even *A. viride* was suffering in some places 'due to depredation'. A specimen of '*A. germanicum*' (= *A.* x *alternifolium*) from Scafell was included and that fern is possibly now extinct in the Lake District. With the many specimens of filmy ferns from differing localities was one of the bristle fern (*Trichomanes speciosum*), which fortunately does just manage to still survive here. Unfortunately none of the field notebooks that must have been associated with these fascinating collections were available, as it would have been good to know more details of the finds.

After refreshments, kindly supplied by the museum, the natural history curator, Mrs Carol Davies, gave us a conducted tour of the stockrooms behind the public galleries. Here was a cramped surreal mixture of animal heads swathed in plastic, cases of exotic birds and drawers and cupboards full of specimens.

Whilst having lunch at a nearby pub we decided to change the afternoon's plans. The constant heavy and cold rain discouraged us from walking in nearby woods looking at winter-green ferns and we opted instead to spend the afternoon viewing the rest of the

museum. This was most entertaining and informative and I can recommend a visit to Kendal Museum if you are in the area.

Very many thanks to Carol Davies for welcoming us and showing us around.

Heysham LNR, Heysham Head and Thrang Moss, Lancashire – 7 June

Roy Copson

This field meeting began within Heysham LNR (34/407599) close to Heysham Power Station. Thanks to a partnership between British Energy and Lancashire Wildlife Trust, the reserve has evolved in both its biodiversity and the range of habitats it provides for wildlife since the construction of the Power Station. As a result of this it is now a County Biological Heritage Site.

The first location we visited at the reserve was an area of damp willow/hawthorn scrub at the base of a bracken-covered embankment in which there was a fine colony of *Ophioglossum vulgatum*, its primitive appearance being discussed by members of the group. This fern is uncommon in North Lancashire, there being less than ten known sites in the area. Other species present were *Dryopteris filix-mas*, *D. dilatata*, *Equisetum arvense*, and *Equisetum fluviatile*, which was emergent in the marsh and open water of the lake.

From the reserve we travelled to Heysham Head (34/408609), which belongs to the National Trust. We walked along the beach from Half Moon Bay to a cavern at the base of the cliffs. Here, in profusion, was sea spleenwort, *Asplenium marinum*, the cavern providing all the conditions necessary for its proliferation and continued survival. On the cliff edge above the sea spleenwort was another coastal species, royal fern (*Osmunda regalis*), but smaller than others I have seen further inland around Morecambe Bay. Also sharing this precipitous location were *Dryopteris filix-mas* and *Athyrium filix-femina*.

After a picnic lunch at Heysham LNR and a short journey we arrived at Thrang Moss (34/497765) in Silverdale. Due to the kindness of the landowner, Mr Simon Temple, who gave us permission to explore the moss, we were able to study some interesting areas. The main attraction was the hybrid *Dryopteris* x *deweveri* and its parents *D. carthusiana* and *D. dilatata*. These were colonising a clear-felled area of wet woodland, offering a rare opportunity to study this trio of ferns in North Lancashire. There was some heated discussion amongst us as well as wet feet. Continuing along the ride we observed *Equisetum palustre* as we walked towards the northern end of the moss where we entered deciduous woodland over limestone. This was out-cropping frequently, providing anchorage for yew trees (*Taxus baccata*). Between the yews, where some light was reaching the woodland floor, there was the evergreen *Polystichum setiferum* and some dog's mercury (*Mercurialis perennis*) growing where humus had accumulated between the limestone rocks. Close by on the eastern edge of the wood Leighton Beck follows a fracture in the limestone providing suitable habitat for hart's tongue fern (*Asplenium scolopendrium*) and hard shield fern (*Polystichum aculeatum*), which punctuated the steep rocky sides on both sides of the beck. The faded remains of bluebell (*Hyacinthoides non-scripta*), primrose (*Primula vulgaris*) and herb paris (*Paris quadrifolia*), indicated that this was a woodland of some antiquity.

The diversity of pteridophytes we saw, the interesting venues we visited and 'wall-to-wall' sunshine combined to produce a pleasurable day that ended with tea and cakes in a roadside diner on the A6 near Milnthorpe.

Moughton, nr. Austwick, Ingleton, North Yorkshire – 5 July — Frances Haigh

After meeting at Austwick (34/769686) on a mild but overcast day, fourteen members shared transport to finally park on Crummack Lane at 34/772706. The scars of Moughton were clearly visible, though the first three kilometres of the walk was along a narrow walled track. Here the underlying rocks are Silurian slates and grits and the ferns we passed reflected this: *Athyrium filix-femina*, *Dryopteris dilatata*, *D. filix-mas*, *Blechnum spicant*, *Oreopteris limbosperma* and *Pteridium aquilinum*. However, scant attention was paid to these plants – we were anticipating the delights to come. After crossing Austwick Beck with its attractive slab footbridge and turning north, we were able to view a clear example of unconformity where the horizontal strata of the limestone cap of Moughton overlie the older, nearly vertical, Silurian rocks. Just before the final climb a few fronds of *Phegopteris connectilis* poked out from the bottom of the wall and the wet area around a spring yielded *Equisetum arvense*. On reaching the limestone our first stop was for lunch before we became too engrossed in the ferns.

photo: F. Haigh

North-West Group by *Polystichum lonchitis* on Moughton

Anne & John Grue, Harvey Shepherd, Sue Sykes, Melville Thomson (*head only*),
Robert Sykes, Denise Copson, Alison Evans, Ann Haskins, Ann Gill
(Chris Evans & Ken Trewren in the distance)

Moughton lies just outside the Ingleborough National Nature Reserve and its surface is composed of large areas of broken clints with some pavement containing deeper grykes and supporting large amounts of juniper. It didn't take long for our list of ferns to grow: *Asplenium scolopendrium*, *A. trichomanes* subsp. *quadrivalens*, *A. viride* (including a fine forked specimen), *Cystopteris fragilis*, *Gymnocarpium robertianum*, *Dryopteris submontana* and *Asplenium ruta-muraria* were all plentiful. We also counted nine plants of *Polystichum lonchitis*, which had been our main objective and which we thought was very encouraging but I later heard that one BPS member (not present that day) has counted 76 in that area during his own private searches! Several plants of *P. aculeatum* were also seen, showing the characteristic yellow-green fronds it has when it grows on limestone.

Then the group decided to split up. The adventurous ones went over the top of the hill to descend steeply down to the valley, and were rewarded by finding *Selaginella selaginoides* and also *Primula farinosa* in a wet area as well as some *Dryopteris affinis*. The rest of us retraced our route and found a small *Polypodium* and a lone example of *Asplenium ceterach* on the pavement as we descended and also came across *Blechnum spicant* in peaty areas amongst the limestone.

The two groups met up for further refreshments at the footbridge, where a shrivelled frond of *Polypodium interjectum* was found. But where was the plant it came from? From there it was only a short walk back to the cars to go our own ways after a pleasant day's ferning.

Holme Crag, Witherslack and Humphrey Head, Cumbria – 26 July

Jack Garstang

With another warm, sunny day in prospect, just driving to this meet was a real pleasure. After turning off the A590 for Witherslack, the first stone wall was covered with hundreds of *Asplenium ceterach*. Another mile or so of *Dryopteris filix-mas*, *D. affinis*, *A. scolopendrium*, *Polypodium* and *Pteridium aquilinum* brought us to Holme Crag (34/423837), the idyllic home and garden of Jack Watson.

Lying in the bottom of the Winster Valley, the garden covers over four acres of mixed woodland, steep rocky outcrops, a large pond, bog, flower-beds and shrubbery. It is just a few metres above sea-level and, although five kilometres inland from the shores of Morecambe Bay, the surrounding fields are subject to occasional tidal flooding due to water backing up the River Winster. Jack opens the garden to visitors 365 days of the year. Seventeen members attended.

The pond fringes were home to several crowns of *Osmunda regalis* and lots of *Equisetum fluviatile* and *E. arvense*, while the steep rocky area provided many fine colonies of *Asplenium scolopendrium* Undulatum Group, *A. adiantum-nigrum*, *Polypodium interjectum*, *Blechnum spicant*, *Dryopteris filix-mas*, *Athyrium filix-femina* and *Phegopteris connectilis*. A delightful small stumpery by the house was covered with *Polystichum setiferum* 'Divisilobum' and *Asplenium scolopendrium* Crispum Group. Along the woodland paths were *Polystichum setiferum* 'Plumosum Bevis', *Athyrium filix-femina* 'Frizelliae', *Asplenium scolopendrium* Laceratum Group, *Adiantum pedatum* and a scorched *Dicksonia antarctica* that had lost out against the hot weather.

A short drive through Grange-over-Sands and Kents Bank took us down onto the beach for lunch at the foot of Humphrey Head (34/390740), a mile-long limestone uplift straight out of the sands of Morecambe Bay. It runs north to south with the west face rising to 53 metres (170 feet). Ferning at Humphrey Head does require some confidence at heights, and in this environment it becomes an ideal pastime for aged rock climbers. The screes and lower face of the cliff are home to extensive colonies of southern polypody (*Polypodium cambricum*), with *Polystichum setiferum* among the sheltered wooded areas. Given the high exposure and summer drought, which was delaying any new growth of the *P. cambricum*, it was only by collecting old fronds and counting the number of basal and indurated cells of the annulus of old sporangia that we were able to arrive at a positive confirmation.

Two beautiful locations and marvellous weather made this a perfect meet.

Blea Moss, Cumbria – 13 September

Mike Porter

On a perfect autumn day, 13 members met at the Blea Tarn National Trust car park (35/296043), situated on the narrow, twisting road between Great and Little Langdale. The plant conservation organisation Plantlife had intended to carry out a survey of *Lycopodiella*

inundata, which occurs at Blea Moss in one of its two known Cumbrian sites. However, the North-West group members present were happy to take over this responsibility, leading to a rewarding but perhaps more demanding day than had originally been planned!

We set off, passing close to Blea Tarn before turning down the steep rocky path that descends to the moss – still wet but rather less soggy than normal after the hot, dry summer. Some years ago the *Lycopodiella* colony had consisted of two discrete patches but recent visits had suggested that it was thriving and spreading over other parts of the moss. This was confirmed by the discovery of a small number of plants immediately south of the bridge by which we crossed on to the east side of the beck, more than a hundred metres north of the original colonies. From here on, more and more plants were noted, steadily increasing in quantity until the main colony was reached. The main difficulty here was attempting to count the number of fruiting spikes but by a combination of careful observation and estimation we reached a total of about 3,600.

Further south, by the sheepfold, the other original colony held about 1,300 fruiting spikes. More new colonies were discovered as we progressed south, most of them small but apparently healthy, and we were especially pleased to find small numbers on the west side of the beck where none had been reported before. The final count was 6,200 fruiting spikes over an area about 300 metres long by up to 50 metres broad. Almost all the plants were growing in the less wet areas, some even in cracks in the rocks but we were agreed that in a normal year the whole site would be frequently 'inundated'. Associated species included the uncommon – but here abundant – *Drosera intermedia* (oblong-leaved sundew), *Rhynchospora alba* (white beak sedge) and the moss *Campylopus atrovirens*. On the east side of the site was abundant *Juniperus communis* (juniper) while *Huperzia selago* was thinly scattered over the whole site. The counting, noting of grid references and careful searching for further plants had taken several hours and we were glad to walk back along the road to the cars and have our sandwiches, shaded from the sun. Thanks are due to all participants for their hard work and persistence.

photo. M.S. Porter

***Lycopodiella inundata* at Blea Moss**

The afternoon was spent in a quiet stroll through the woods by Blea Tarn, noting a small number of common ferns and fern allies including *Oreopteris limbosperma*, *Dryopteris affinis* subspp. *borreri* and *affinis*, *Blechnum spicant*, *Athyrium filix-femina* and *Equisetum fluviatile*.

photo: F. Haigh

North-West Group at Blea Tarn, Langdale

Barry Colville, John Defferton, John Grue, Bruce Brown, Mike Porter, Melville Thomson, Ann Haskins, David Nelson

AGM, Holehird, Windermere, Cumbria – 11 October

Robert Sykes

Our last meeting of the season is always a good day. Admittedly we slip in an AGM, but we also have a plant sale, competitions and good speakers.

In the morning Trevor Piearce and Ruth Berry spoke about fern prints. Trevor gave an account of the history and techniques of nature-printing, starting with cavemen, through Henry Bradbury, to the reduced copies of Jones' Nature Prints at the back of Druery's *British Ferns and their Varieties* (1910). He brought examples both of the books and of the use of direct impressions of ferns in pottery and an elegant occasional table. Ruth demonstrated techniques of inking fern fronds and printing direct onto paper. She is a superb photographer and had some wonderful black and white prints obtained by placing fronds on a light box and exploiting the translucent quality of the fronds.

In the afternoon Simon Webb of English Nature gave a wide-ranging talk on limestone pavements. He explained the history and geology of pavements, the various habitats they yield and their ecology and botany, including the ferns, the threats they face and the problems of management. Simon was involved in the survey for the local Limestone Pavements Orders and he knows his pavements, and gave a compelling account with numerous and excellent slides.

The standard of the entries for the potted fern competition was extremely high. Michael Hayward won the hardy fern class with a fine *Polypodium cambricum* 'Richard Kayse', and Robert Crawford the indoor fern class with a variety of *Hypolepis* (an unexpected by-product from a sowing of tree-fern spores). Trevor Piearce won the fern word puzzle.

BOTANICAL CORNWALL GROUP

Ian Bennallick

Botany is very much like detective work: solid, steady work going over clues, reading the right books and asking the right people, can lead to a proper Sherlock moment. One such sleuth is Rose Murphy. Not satisfied with the identification of material of *Cystopteris fragilis* from river banks of the River Camel at Polbrock (20.06 and 20.07), a site first discovered in 2000 by Matt Stribley, Rose gathered information to prove that it was in fact not *C. fragilis*, but a species completely new to Britain!

The clues were there – the habitat was not right for *C. fragilis*, the fern was growing in very humid conditions on a seasonally inundated riverbank, and the pinna veins ended in the u-shaped depressions rather than at the tips. When looked at under a microscope, the mature spores appeared to be slightly different to those of *C. fragilis*. On consulting a few fern experts the material was named as *C. diaphana*, which in Europe is only recorded in the most humid habitats on shady, mildly basic rocks in southern and south-western zones of Corsica, France, Italy, Portugal, Sicily, Spain and in the Azores. After further investigation by Natural History Museum staff it is considered native to the site and could have been there since the last Ice Age!

Luck also plays a part in plant hunting and serendipity once again struck Ian Bennallick. Ian found *Gymnocarpium dryopteris* in woodland beside the River Inny near Laneast (20/2283), not seen in Cornwall since 1930, and a second recent site for marsh fern (*Thelypteris palustris*), in a boggy area near Morwenstow (21/2014), both in East Cornwall. Old records for *Gymnocarpium dryopteris* include Minster Wood near Boscastle (20/08), near Truro (10/84) and Brown Willy on Bodmin Moor (20.17). Although many botanists had searched suitable habitats at these localities it had eluded discovery, but as the fern is rather small and dies down in the autumn, it may have been overlooked. *Thelypteris palustris* had been recorded in 20/21 in the past but the old locality cannot be found, either in the Cornwall or Devon part of that square. With the discovery of the site at Morwenstow it is hoped that searches in suitable habitats in all the known old sites in Cornwall may prove fruitful. Also present at the Laneast site on a roadbank was *Polystichum aculeatum* as well as *P. setiferum* and several ferns found nearby were confirmed as *P.* x *bicknellii* by Rose Murphy; these large plants were showing hybrid vigour.

The Botanical Cornwall Group organised a number of events during the latter part of 2002 and through 2003, not all of which concentrated on ferns. Below is a summary of all these events.

St Nectan's Glen (20/0788) and Minster Wood (20/1090) – 5 October 2002

The visit to St Nectan's Glen (20/0788) and St Nectan's Kieve (20/0888) just to the east of Tintagel, the part of Cornwall that most visitors associate with King Arthur, took place on a lovely autumn morning. One of the aims of the visit was to refind *Cystopteris fragilis*. It was first recorded during a BPS meeting in 1969 at the head of St Nectan's Glen. Bridget Graham saw a plant in Rocky Valley near here, but it could not be refound in 1973. With recent discoveries of *Hymenophyllum tunbrigense* in shaded valleys away from the granite areas in Cornwall, there was a possibility that the site may also have this species. The valley is short and particularly steep, with a small stream running a short distance to the sea through the wonderfully scenic Rocky Valley. A short way up the valley small overhangs of rock were searched for the gametophyte of *Trichomanes speciosum*. This has been found in a few places in Cornwall away from the one native sporophyte population. The exact site details of the sporophyte population must remain restricted. One small patch of the gametophyte was found and under a strong lens (x20) the filaments and gemmae were seen.

Photo: M.J. Stribley

St Nectan's Kieve, Cornwall – 5 October 2002

Zowie Keating, Claire Roper, Mary Atkinson, Ian Bennallick & John Whiteway

Following the path through luxuriant stands of *Athyrium filix-femina*, *Dryopteris filix-mas*, *D. dilatata* and *Asplenium scolopendrium* leads you eventually away from the stream to the tourist entrance to St Nectan's Kieve, a waterfall and plunge pool as dramatic as Cornwall has to offer. Inevitably, with King Arthur and mysticism in the air, this natural feature has been turned into a paying tourist attraction. After crossing the owner's palm with our £1 coins we took the steps down the side of the valley. Although the sides of the cliff surrounding the waterfall were well covered with mosses and liverworts, neither of the targeted fern species could be found. The place does have a magical quality and many others must have also agreed; the small offerings of mementoes, personal pictures and candles placed around the dripping slopes bear testament to the mystical strength of the place. However, the group still felt that it was just a waterfall! Walking further upstream along a footpath to Tredole Farm (20/0989), *Dryopteris aemula* was found in abundance along the stream-bank, also *Sibthorpia europaea* (Cornish moneywort) with which it often grows.

Photo: M.J. Stribley

***Hymenophyllum tunbrigense* at Minster Wood, near Boscastle, Cornwall – 5 October 2002**

In the afternoon the group visited Minster Wood (20/1090) and Peter's Wood (20/1190) just to the east of Boscastle. These woods had an old record for *Gymnocarpium dryopteris* and although suitable places were searched it could not be found. The known population of *Hymenophyllum tunbrigense* in Minster Wood just downstream from Minster Church was located and a super picture of a frond was taken by Matt Stribley.

Saltash – 21 November 2002

The final field meeting of 2002 also concentrated on ferns and the group was very lucky to be joined by Dr Chris Page. Members met at Saltash railway station (20/4358) in pouring rain, with the intention of finding out if *Polypodium cambricum* was more widespread in the area. The south-east of Cornwall, especially around the lower parts of the Tamar estuary, is known to have a few populations of the fern. Before leaving the station it was seen on adjacent walls, and also in the nearby village of Forder (20/4158). The rain relented during the morning, and a visit to Cargreen (20/4362), situated on the western bank of the River Tamar north of Saltash, also proved successful. *P. cambricum* was found in abundance on walls in the village, and a very large specimen, growing beside a wall next to the Crooked Spaniards Inn, puzzled Chris.

After a welcome lunch at the pub, the afternoon was spent at St Dominick (20/4068), where historical records had been made of *Polystichum aculeatum*, a rare fern in Cornwall. Without a prior visit, a small lane north of St Dominick was chosen from the map as a suitable place to search, but hopes of finding the species were low. However, and somewhat amazingly, at the end of the lane Mary Atkinson found a fine specimen on the bank. No other plants could be seen, but further searches could prove successful. Although the light was failing, a small group walked to Boar's Bridge (20/4168), hoping to see some last fronds of *Oreopteris limbosperma*, which was seen on the roadside bank by Paul Green in 2001, but the road bank had been trimmed so no fronds were found. However, a visit by two members in 2003 located many plants further towards Cotehele.

Indoor meeting, Fraddon – 7 December 2002

The final meeting of 2002 was held at Fraddon Village Hall in mid-Cornwall and acted as an end-of-year get together for local botanists, a chance to reflect on the finds of the year and to discuss meetings and workshops for 2003. Tim Dingle, Matt Stribley and Ken Preston-Mafham showed some excellent slides and digital pictures of flora and places, not just from Cornwall but world-wide. Colin French demonstrated an updated version of the Flora of Cornwall CD-ROM and Rosemary Parslow brought some wonderful photos of the Isles of Scilly. Paul Green brought a display on *Polypodium cambricum* in Co. Waterford, where it grows very large and luxuriantly, and Mary Atkinson brought a mystery grass for the rest of us to identify. Chris Page also brought news of a very exciting fern find – he had only recently found the very rare hybrid *Asplenium* x *jacksonii* on a wall on a farm in West Cornwall. A brilliant find to end an eventful year.

BSBI Local Change strategy meeting – 12 March 2003

The first meeting of 2003 took place partly indoors and partly outdoors. The BSBI Local Change survey was discussed and part of the day was a trial session recording in one of the tetrads chosen to see how many species could be recorded and how the recording for the next two years of the survey would be best organised. The area chosen was Bishop's Wood (10/8248), north of Truro. The usual common ferns such as *Athyrium filix-femina*, *Dryopteris filix-mas* and *D. dilatata* were seen but of note was the number of *Blechnum spicant* plants within an old fort now covered with *Betula pubescens* (downy birch). In the bottom of the valley in the wetter areas some *Osmunda regalis* was found and on a rock outcrop *Hymenophyllum tunbrigense*, refound at the site only a few years before, was located but was suffering from the lack of rain and moisture.

Polruan (20/15) – 5 April

No ferns of note were seen.

Penhale Dunes (10/75) – 26 April

The meeting at Penhale Dunes was arranged (with permission from the MOD) to look for charophytes (stoneworts) in the wetter dune slacks. Being rather sparse for fern species, the group did manage to find the slack that represents one of Cornwall's two sites for *Equisetum variegatum*. Very difficult to see in the dune-slack vegetation, the distinctive shoots were eventually spotted. Old records of *Ophioglossum vulgatum* exist for a small area of dune grassland called Mount's Field (10/7857) but time ran out before the area could be searched. One member visited the area after the meeting but none were found. The area will be searched for this species in 2004.

Lizard (10/61, 10/71) – 1 May

This meeting was held in conjunction with ERCCIS (Environmental Records Centre for Cornwall and the Isles of Scilly) and targeted the rare lichens of the Lizard. Bryan Edwards guided us around Kynance Cove (10/6813) and showed the members present the many rare species of lichen to be found. Inevitably with all the members on hands and knees searching for rare lichens, *Isoetes histrix* was found at the British Village slope. This is surprisingly widespread in suitable habitats and in recent years had still been showing well into June. However, the dry April had meant that many were yellowing quickly.

BSBI AGM and Anglo-Hiberno-French meeting – 8-12 May

Cornwall played host to the BSBI AGM, with a long weekend of seminars, meetings and field trips attended by over 100 delegates from western Europe.

On Friday morning, representatives of the Botanical Cornwall Group showed the majority of those attending around a reclaimed china clay tip, Caerloggas Downs (20/0156), recently restored to heathland. Although it was only four years since soil and vegetation had been transferred from a neighbouring area of heathland that was about to be dumped upon, heathland vegetation was quickly establishing on the quartz sand spoil. Around the edges of the tip *Pteridium aquilinum* was already spreading and in places *Blechnum spicant* and *Dryopteris dilatata* were quickly becoming established with other heathland species such as *Calluna vulgaris* (ling), *Erica cinerea* (bell heather) and *Agrostis curtisii* (bristle-bent). Although not seen on the day, *Oreopteris limbosperma*, a species with restricted occurrence in Cornwall as it favours the granite moorland areas, was searched for. This fern has been increasingly recorded in damp areas associated with china clay waste tips and pits. Plenty of suitable habitat occurs around Caerloggas Downs and it is hoped that further surveying will find it colonising suitable places.

Sunday was devoted to Cornwall's botanical jewel in the crown – a day trip to the Lizard, with two circular walks based at Kynance Cove (10/6813) and Lizard Village (10/7012). As on the 1st May trip, *Isoetes histrix* was found in turfy spots and around serpentine outcrops and *Pilularia globulifera* was discovered doing very well in a ditch between fields inland from Kynance Cliff. This species is a member of the 'puddle gang', a group of plants that grow in the ephemeral puddles and pools that are found on trackways and in fields on the Lizard peninsula, more usually in the heathland areas. Other members of the 'puddle gang' include the Nationally Rare *Ranunculus tripartitus* (three-lobed water-crowfoot), *Cicendia filiformis* (yellow centuary), *Chara fragifera* (strawberry stonewort), *Juncus pygmaeus* (pigmy rush) and *Mentha pulegium* (pennyroyal). The requirements and distribution of these six species are currently being investigated by Plantlife to establish exactly how their populations can be maintained. *Osmunda regalis* was found in the small valley north of the Kynance car park and *Asplenium obovatum* subsp. *lanceolatum* was found by some on the roadside wall to Lizard Lighthouse (10/703117).

A few delegates travelling back on Monday opted to visit the Eden Project while others explored Par Beach (20/0853), a well known site for many rarities. Chris Page pointed out some fine specimens of *Polypodium interjectum* on a low cliff and spotted *Asplenium marinum* on a cliff far across a stream!

Isles of Scilly – 6-9 June

Nine members travelled to the largest island, St Mary's, on Friday morning to spend the weekend helping Rosemary Parslow, the BSBI recorder for the islands, with the BSBI local change survey. Saturday was spent recording around part of the island; *Asplenium obovatum* subsp. *lanceolatum* was found in crevices on the granite walls and most of the common species of fern were seen.

Sunday was spent on the truly wonderful island of St Agnes, an island wild and tame at the same time. Walking over Wingletang Down (00/8807), Rosemary showed us where *Ophioglossum lusitanicum* could be found earlier in the year, and in the same spot *O. azoricum* was present in the short turf.

Drannack (10/5936) and Tregadjack (10/4933) – 12 July

This meeting concentrated on arable plants, although arable and bulb fields were visited. A damp field at Bezurrel (10/5936), which had been drained and used as a bulb field, was overrun with *Equisetum arvense* and *E. palustre*. Further down the valley in a damp corner of a field *E. fluviatile* was added to the list.

Tredwen Barton (20/1785) and Greena Moor (20/2395) – 19 July

No ferns of note were seen except *Dryopteris aemula* on a ditch-side at Greena Moor.

Bude (21/20) – 9 August

This day concentrated on the willows that are found along the Bude Canal, with the expert Desmond Meikle demonstrating the various species and hybrids. As to fern interest, *Asplenium ruta-muraria* was found on a bridge at St Anne's Hill (21/2104) and *Equisetum palustre*, *E. fluviatile* and *E. arvense* along the canal.

Upper Tamar Lake (21/2811) and Lower Tamar Lake – 16 August

A very low Upper Tamar Lake with much exposed mud enabled the group to walk around the whole perimeter with ease. Apart from *Equisetum palustre*, *E. fluviatile* and *E. arvense* around the edges no pteridophytes of note were seen. Lower Tamar Lake had been kept full for the anglers and again no ferns of note were seen.

Draynes Wood and Golitha Falls (20/2268) – 11 October

This meeting was arranged with Mark Pool, the British Bryological Society recorder for Devon, to introduce the group to woodland mosses and liverworts. A good range of bryophytes were seen in woodland and around the rocky falls on the Fowey River, and huge patches of *Hymenophyllum tunbrigense* swathed the north-facing rock-faces, with *Blechnum spicant*, *Dryopteris dilatata* and *Athyrium filix-femina* luxuriant in the woodland.

Many thanks to all those who have helped the group this year but special thanks goes to Rose Murphy who continues to inspire us!

Meetings organised for 2004 will again cover a wide and diverse range of botanical subjects in places all over Cornwall. Recording and appreciating ferns always forms part of the trips, and it is hoped that two or three of the events will concentrate on ferns, possibly on the identification of a specific group. If you would like more information, details will be included in future Botanical Cornwall Group newsletters, found on the website www.floracam.co.uk/bcg, or contact Ian Bennallick for further details. Looking forward to seeing you in Cornwall!

SCOTLAND

The Rhins of Galloway – 14-15 June

Frank McGavigan

In south-west Scotland, almost completely surrounded by sea and warmed by the Gulf Stream, the Rhins of Galloway is climatically the most favoured part of Scotland. With frost a rarity, the only worry is the prevailing sea breeze, which can become gale force at times. Logan Botanic Garden (25/097428), situated towards the southern end in a natural hollow and further protected by a shelter belt of trees, can grow a wide range of exotic plants that would not survive in most other parts of the UK.

It was to see Logan's collection of ferns that six of us (Tim Godfrey, Frank Katzer, Frank McGavigan, Heather McHaffie, John Munion and Alastair Wardlaw) gathered together for a weekend in June. In gloriously warm sunshine we were shown round by Barry Unwin, the Curator, whose pride and joy are his tree-ferns – *Cyathea dealbata*, *C. australis*, *Dicksonia fibrosa*, *D. squarrosa*, and a veritable forest of *D. antarctica*. I doubt if there are so many *D. antarctica* in one place anywhere else in Britain. Barry has plans to build a viewing platform so that visitors can look down on his latest tree-fern grove. For now you have to look up, as the original dicksonias were planted at least 150 years ago and are now of considerable height (one had *Pyrrosia rupestris* clambering up its trunk). With our eyes back on the ground we could spot young self-sown sporeling *D. antarctica* – Barry showed us a shady mossy wall that could only be described as a tree-fern nursery. Not many of us can boast *D. antarctica* as a fern weed. Barry pots them up and sells them to visitors. He doubts if many survive their first year away from Logan.

Whereas the garden is obviously a 'must visit' for members of the Tree-Fern Special Interest Group, there is also a wide range of other ferns to attract the more 'terrestrial' pteridologist. Two blechnums stood out – *Blechnum chilense* (labelled *B. tabulare* but I'm not going to get into that argument), used extensively as ground cover and looking fabulous with warm brown new fronds that had just unfurled when we were there, and *B. novae-zelandiae* with apple-green new fronds contrasting dramatically with the literally black fronds of the previous year. There was a huge clump of *Woodwardia radicans* with fronds six feet long enjoying the added shelter of the walled garden, while *W. unigemmata* thrived happily in the woodland garden. Here too were many – how shall I put it? – more typically ferny ferns, notably *Lophosoria quadripinnata* (guaranteed to make any fern grower jealous), *Rumohra adiantiformis*, *Polystichum falcinellum*, *Histiopteris incisa*, *Dryopteris rosthornii* and hosts more. Make the effort and go and see for yourself.

After the Botanical Garden we visited Logan House Garden next door, where the Head Gardener, Jimmy Reid, had promised to take us to another part of the estate to see *Osmunda regalis* in the wild. I won't tell you exactly where because Jimmy said that recently someone had been digging up plants and he was, understandably, anxious to keep the site a secret. Despite the thefts there were still several clumps of royal fern growing among *Dryopteris dilatata* and *D. carthusiana* and, of course, bracken.

Later we visited an old brick works where the shallow edges of the ponds that had once been the clay pits were crowded with *Equisetum fluviatile*. However, the commonest horsetail in the area was *Equisetum telmateia*; it was everywhere, although not making the statuesque height that it reaches in more sheltered localities.

The following day took us to the Dunskey Estate (25/004554), just north of Portpatrick. Here we took a path through a wooded glen down to the sea. Along the path side and under the trees grew *Athyrium filix-femina*, including a red-stiped version, *Blechnum spicant*, *Dryopteris filix-mas*, *D. dilatata* and *D. affinis* subsp. *borreri*. But the prize of the day was still to come for down by the sea the cliffs were studded with *Asplenium marinum* sprouting

from every crack in the rock-face. Then we walked along the cliff top to Portpatrick for a relaxing hour over a pint and a sandwich before making our way by a shortcut back to the cars with *Asplenium trichomanes*, *A. ruta-muraria* and *A. adiantum-nigrum* growing in the roadside walls.

Inverarnan, Glen Falloch and Glen Ogle, West Perthshire – 26 July

Frank McGavigan

(*Participants:* Adrian Dyer, Frank Katzer, Frank McGavigan, Andrew MacGregor, Heather McHaffie, Mike Taylor, Alastair Wardlaw.)

Counting plants of the ground-hugging, almost invisible *Lycopodiella inundata* (marsh clubmoss) in the rain while being eaten by midges, is not my idea of fun. But such is the Scottish group's dedication to scientific research that this is what we were doing on 26th July at Inverarnan at the north end of Loch Lomond (27/317185). First find your plants: the typical habitat is acidic wet ground without too much competition. Look for sundew whose sparkle is easy to spot and there is a good chance you will also find *Lycopodiella*. Using Mike's GPS we accurately recorded the position of each patch. Distinguishing separate plants for the count was much more difficult but we came up with a total of 1,080 (nearly double the last survey by RBGE in 1999). On slightly drier ground were lots of spotted heath orchid. Andrew found pale butterwort and Heather pointed out bog orchid. As for other pteridophytes, there were the usual *Pteridium aquilinum*, *Athyrium filix-femina*, *Blechnum spicant*, *Dryopteris affinis*, a *Polypodium* out of reach in a tree, and on the ground two more clubmosses – *Selaginella selaginoides* and *Huperzia selago*.

We then headed further north to the Falls of Falloch (27/337208), new to us but certainly visited by Victorian pteridologists as it is an accessible wooded gorge with some spectacular waterfalls. Sure enough the fern flora is rich: *Athyrium filix-femina* (though no fancy varieties), *Dryopteris affinis*, *D. dilatata*, *Blechnum spicant*, *Oreopteris limbosperma*, and of course bracken and epiphytic polypodies, all as expected. But then Frank Katzer found the filmy fern *Hymenophyllum wilsonii*, followed by beech fern, *Phegopteris connectilis*, and a single clump of *Polystichum aculeatum*. The water was too high to cross the river and explore the east bank, but this is definitely a site worth another visit.

Leaving the headwaters of Loch Lomond, we drove along Glen Dochart and down Glen Ogle to walk along part of a new cycle way, actually the old railway track. We started where it crosses the road near Lochan Larig Cheile (27/558283), soon finding *Equisetum arvense* and *E. palustre*, while in the water was *E. fluviatile*. Then Heather spotted the washed up quills of *Isoetes lacustris*, and probably *I. echinospora* also, although it is difficult to distinguish between the two. All within five minutes of getting out of the car.

Further down the track Adrian demonstrated that crushing bracken releases cyanide with its characteristic almond smell. We had earlier been trying to detect the lemon in lemon-scented fern – fruit maybe, but to us not lemon. Cyanide seems appropriate for bracken, but can other ferns be detected by smell: an expensive French perfume for lady fern perhaps, or venison for hart's tongue, or even Christmas trees for holly fern? We saw none of these last two but we did find *Asplenium viride*, first in the shady, dripping walls of a railway cutting, then in the dry, sunny side of an embankment wall – a truly versatile fern. *A. ruta-muraria* was also on the wall and nearby was *A. trichomanes*, one of which Heather described as 'fat and juicy', a somewhat unorthodox, but in this case apt, description. We found beech fern again, some tired-looking oak fern, and more *Polystichum aculeatum*. Why are old railway lines such good hunting grounds for ferns? And this one is easily accessible – on level ground, with the cycle track allowing unimpeded walking. Another good day and a highly recommended site for any fern lover visiting Scotland – just remember your midge repellent.

Beinn an Dothaidh, Bridge of Orchy, Argyll – 23 August **Andrew MacGregor**

Heather McHaffie and Frank Katzer were joined on a sunny Saturday by me and fellow fair-weather pteridologist Jim McIntosh, together with two local dogs evidently bred for both smallness and an adherence to random walkers.

A quick and sweaty stomp up to our first ferny spot was enlivened for me by Heather's tasting notes for the commoner fern species. Mostly awful it seems, but I was impressed by her complete sensory engagement with something most of us appreciate only with our eyes. Otherwise, our hike was interrupted only to contemplate a *sylvaticum*-esque *Equisetum* growing somewhat weakly in a flush across our path. Heather deduced from its somewhat untidy appearance and the poor state of its teeth that it was possibly *E.* x *mildeanum*, the hybrid of *E. sylvaticum* and *E. pratense.* We deliberated the matter for some time, aided by some more tidy and toothy *E. sylvaticum* nearby, before agreeing that Heather's diagnosis was definitely plausible.

Emboldened by our certitude, we pressed on to our first stop, an imposing outcrop that furnished us with a variety of lovely ferns (27/3341). Frank had reached the spot ahead of the rest of us and in a jiffy located the lot, including *Polystichum lonchitis*, *Cystopteris fragilis*, *Asplenium viride*, *A. trichomanes* and *Woodsia alpina*. I would have been impressed by Frank's acuity, but my expectations had already been raised by his earlier claim that he could see the *Woodsia* from the car park, some two kilometres away. I realised later that he meant the outcrop. Of the *Woodsia*, we counted 25 crowns, as compared with 15 on a previous visit in 2001. Whether the difference was due to population expansion, more strenuous recording or some combination of the two we left unanswered. The same outcrop was also sprouting some robust polypodies that Heather convinced us were *Polypodium interjectum*. In addition, a good selection of clubmosses was strewn around, namely *Lycopodium clavatum*, *Huperzia selago*, *Diphasiastrum alpinum* and *Selaginella selaginoides*.

A scramble up scree turned up abundant *Gymnocarpium dryopteris*, as well as much *Phegopteris connectilis* and *Blechnum spicant*, all rather weather-beaten but otherwise happy-looking. It also turned up many specimens of *Dryopteris oreades* and *D. expansa*, most of which we were able to confidently distinguish from the *D. filix-mas*, *D. affinis* and *D. dilatata* that were also present, despite a near total absence of spores. More problematic, for the same reason, were the occasional specimens of *Athyrium* that we suspected of being *distentifolium*.

The scramble was to take us at last to a remote clump of *Cystopteris montana*, accessible only by a final vertiginous clamber that was rewarded by a good view of those filigree, triangular – but again sporeless – fronds. Subsequent investigation of a nearby gully, aided in some cases by binoculars, yielded many further clumps of *C. montana*, some of which may not have been recorded previously. Mercifully, these were all out of reach of the still-attendant dogs, who had previously shown willing by trying to chew, paw or otherwise molest every plant we stopped to inspect.

Jim and I departed early and the dogs chose to follow us. When we reached the bottom, they received a rapturous welcome from their owners at the farm where we'd parked. One canine at least was apparently not after all accustomed to such expeditions, but was clearly enticed by our promise of tasty ferns. Having duly reunited dogs with humans, we returned to the car, noting in passing that the adjacent remains of Achaladair Castle were liberally festooned with *Asplenium ruta-muraria*. Reminding myself that rue proper is a somewhat bitter and emetic herb, I resisted the urge and drove swiftly home for some proper grub.

Isle of Arran – 27 September

Frank McGavigan

Despite initial enthusiasm when the idea was first mooted, only four of us managed to make the trip to Arran on the day – Heather McHaffie and Grant Fortune from Edinburgh, Tim Godfrey who had driven all the way from Skye, and myself – although nearest, it still took me almost three hours to get there. That's the trouble with islands, getting there and back severely cuts into fern viewing time. Next time we'll go for the weekend.

Arran lies to the south of Bute in the Firth of Clyde but is a much larger island and much more rugged. Despite what might appear to be inhospitable conditions there are 54 native pteridophytes (species, subspecies and hybrids) listed in the Arran Flora. We saw only a tiny fraction of these, but partly because we spent the morning looking at exotics in Brodick Castle Gardens (26/015379).

Here *Dicksonia antarctica* flourishes and spores liberally. Alastair Wardlaw was keen for us to investigate how far from the parent plant the sporelings occurred, as he is puzzled as to why, if spores are viable in the immediate vicinity, they do not appear to germinate in suitable localities further afield. This would have been a major exercise requiring far more time than we had. We could only speculate, with Heather's theory winning the argument i.e. that the sheer number of spores landing near the parent would increase the likelihood of at least some germinating, whereas further away the relative paucity of viable spores combined with native competition would diminish the chances of survival to zero. However, as she said, we had not looked elsewhere so there may well be sporeling *Dicksonia* struggling to survive in the undergrowth further away. It was interesting that the Brodick gardeners had been making attempts to clear the native ferns from around the tree-ferns, presumably in the process increasing the chances of *Dicksonia* sporeling survival. (They hadn't cleared the bracken plant, which by scrambling through a bush had reached a height of at least 12 feet.)

Other ferns seen at Brodick were *Woodwardia radicans*, *Osmunda japonica*, *Microsorum diversifolium* (from Australia and New Zealand), some fine specimens of *Athyrium filix-femina* (Cruciatum Group) – i.e. sporeling 'Victoriae', and a clump of that most elegant fern from Central and South America, *Lophosoria quadripinnata*. There are woodland walks where for sure we would have encountered native ferns, but we did not have time to explore, being distracted by the '33% off' plant sale at the garden shop. Well, one must have some broad-leaved plants to show up one's ferns to their best, mustn't one?

In the afternoon we took the forest walk from Whiting Bay up to Glenashdale Falls (26/024248), which the tourist guidebooks describe as 'ferny'. It certainly is, although not exactly species-rich. *Dryopteris affinis* (probably subsp. *affinis*) predominated and there were some magnificent shuttlecock specimens among the trees. Worth a visit just to admire the sheer beauty of these alone. *D. dilatata* was also common, with *Blechnum spicant* and occasional *Asplenium scolopendrium* and quite a number of patches of beech fern (*Phegopteris connectilis*). We were disappointed not to see *Dryopteris aemula*. It seemed the right kind of habitat – damp shade at low altitude and subject to the warming effects of the Atlantic Gulf Stream. Perhaps the steep sides of the glen were too well drained. The Gulf Stream also explains why Arran has a number of recorded sites for *Trichomanes speciosum*, the Killarney fern, but their whereabouts are a closely guarded secret.

Group of European Pteridologists (GEP) Excursion

Gmünd, Austrian Alps – 24-28 August

Patrick Acock

Claude Jérôme, who organised the first GEP meeting, had kindly agreed to lead us on this summer's excursion, having visited the area four times recently. We stayed in Gmünd, about thirty miles east of Innsbruck and were able to greet a number of old friends. Despite the absence of the Spanish contingent, a larger than usual group (27) gathered in the afternoon.

On the first day we travelled into the neighbouring town of Gerlos and drove as far as we could above the north side of the town. Within minutes of leaving the cars we had seen four horsetails including *Equisetum pratense* and *E. sylvaticum*. We also saw *Gymnocarpium dryopteris*, *Dryopteris expansa*, *Oreopteris limbosperma* and *Cystopteris montana*, so very rare in Britain. Much enthusiasm is always shown on these forays when we meet clubmosses, and after the group discovered *Diphasiastrum* x *issleri* and *Lycopodium clavatum*, I went on to look at *Polystichum lonchitis*, *Asplenium viride* and *Cystopteris fragilis*. We walked on further to a waterfall for lunch and saw the delicate *Cystopteris alpina* along with a stand of *Gymnocarpium robertianum*, which then gave way to *Cystopteris montana*. Retracing our steps part way and then taking a different route back, *Diphasiastrum complanatum*, *Dryopteris carthusiana* and *Phegopteris connectilis* were added to a growing list. Breathtaking views, so typical of Austria, were around us all day.

Tuesday saw us in a large cavalcade heading for the Gerlospass to marvel at the spectacle of Europe's largest waterfall at Krimml. Within yards of the start of the walk we were able to photograph the truly beautiful *Polystichum* x *luerssenii*. Not far away we found both parents, *P. aculeatum* and *P. braunii*. The constant spray from the waterfall drifted some distance and it was here that a whole multitude of ferns could be found but I was surprised to come across *Matteuccia struthiopteris* and much *Dryopteris* x *ambroseae*.

After the exhausting climb we had lunch and then pressed on and it soon flattened out with the path running alongside the large river. Here we came across *Lycopodium clavatum* subsp. *monostachyon*. And then we were on the open hillside where *Polystichum lonchitis*, *Dryopteris affinis* subsp. *cambrensis*, *Asplenium trichomanes* and *Polypodium vulgare* held sway. We returned down the other side of the river below the first part of the falls to see if there were different ferns; we especially hoped to see *Dryopteris remota*, but only added *D. carthusiana* to our list. However, we had the good fortune to meet Claude Jérôme, who offered to take us back to the foot of the falls to show us *D. remota*. It was good to see this plant growing in the wild. We had hoped to stop off and look for *Equisetum pratense* on the way back, since Michel Boudrie had wanted to see some good specimens, but it was very late and Michel was giving the evening talk on his trip to the Juan Fernández Islands.

Wednesday saw us taking a bus to a site near Ginzling. Normally one has to walk in, but as our bus driver was a local he was allowed to take us in so that we could start our search for *Polystichum* x *meyeri*, the hybrid between *P. lonchitis* and *P. braunii*, without hiking for many miles. After much searching in a field in which Claude had seen the fern previously, we gathered that cows might have eaten it and the search all around also proved fruitless. However, we were rewarded by more handsome plants of *Polystichum* x *luerssenii*. Many of the usual ferns of the mountains were seen but none that we had not seen on our previous two days.

The trip was idyllic, with breathtaking scenery, many unusual ferns, good company and wonderful, informative discussions in the evenings over dinner and later in one of the lodges.

In 2004 we will be on the Italian side of the border with France and in 2005 in Brittany. If you are interested in joining the GEP annual excursion please contact Prof. Ronnie Viane, Dept. of Morphology, Systematics and Ecology, Section: Pteridology, K.L. Ledeganckstraat 35, Gent, B-9000 Belgium. E-mail: Ronnie.viane@rug.ac.be; Tel. & Fax: +329-2645057.

HORTICULTURAL SHOWS

BBC GARDENERS' WORLD LIVE! – 11-15 June

A.R. Busby

This year I arrived at the NEC, Birmingham to find that the staging for the stand had been set up, but not as I had requested. With the help of my NCCPG friends and some borrowed tools, the staging was re-erected as I wanted it.

In spite of having over 60 ferns in pots to choose from, I had difficulty in finding 20 ferns worthy of public gaze. Luckily, Bryan and Gill Smith had stated their intention of bringing some of the Society's merchandise to sell to the public from the stand. This took up some space but I still had to use one or two ferns that were not really in 'show condition'.

Wednesday, the first day of the show, proved disappointing. It seemed that fewer members of the public attended in spite of glorious weather.

It has been stated by the show organisers that they intend to double the size of the show next year. It begs the question – will the public have the time or inclination to make their way to the stands of the specialist societies?

My thanks are due to Mr and Mrs M. Green, Mrs B. Smith, Mr B. and Mrs G. Smith, Dr A. Ogden and Mrs E. Graham for helping me on the stand.

The dates of next year's show are the 16th to 20th June, and we are always pleased to see members visiting our stand. If they feel they can spare a couple of hours to work with us, so much the better. You need not be an expert on ferns to make a valuable contribution on the Society's behalf.

photo: B.D. Smith

Alan Ogden, Matt Busby & Gill Smith on BPS stand at BBC Gardeners' World Live!

SOUTHPORT FLOWER SHOW – 21-23 August

A.R. Busby

I expected the extreme temperatures and dry weather of recent weeks to reduce even further the numbers and quality of the ferns in the competitive classes. However, I was both pleased and encouraged to see that the quality of the exhibits was very good and the same number of exhibitors had nearly doubled the number of entries. As usual there were a couple of disqualifications, largely due to lack of diligence in appreciating what is required for a particular class, but I felt that the show organisers were partly at fault by not explaining on the show bench exactly what each class was for. Class Eight was a prime example. The card on the show bench demanded ONE FOREIGN FERN without the qualification that it was for a foreign fern HARDY IN GREAT BRITAIN. Consequently, an exhibitor staged a very good *Asplenium nidus* in this class and inevitably I had to disqualify it. A pity, for in the right class it would have got a first or second prize. I shall contact the show organisers and point out this misleading error.

The prize-winners are listed below. The judge was A.R. Busby.

Class 6 Individual Championship: Four hardy, two greenhouse and two foreign hardy ferns: 1st Mr B. Russ, 2nd Mr I. Rawson (2 entries)

Class 7 Three Hardy British Ferns (three distinct species not varieties): (1 entry – disqualified)

Class 8 One Foreign Fern Hardy in Great Britain: 1st Mr I. Rawson, 2nd Mr B. Russ (3 entries, 1 entry disqualified)

Class 9 Three *Polypodium* (distinct varieties): (no entries)

Class 10 Three *Polystichum* (distinct varieties): 1st Mr I. Rawson (1 entry)

Class 11 Three *Athyrium* (distinct varieties): 2nd Mr I. Rawson (1 entry)

Class 12 Three *Asplenium* (excluding *A scolopendrium*): 1st Mr B. Russ (1 entry)

Class 13 One British Fern (any kind or variety): 1st Mr B. Russ, 2nd Mr I. Rawson (2 entries)

Class 14 One Greenhouse Fern: 1st Mr H.J. Abbott, 2nd Mr I. Rawson (2 entries)

Class 15 Three *Asplenium scolopendrium* (3 distinct varieties): 1st Mr B. Russ (1 entry)

Points are no longer awarded to winners. The exhibitor with the most wins in all classes excluding class six receives the Happiland Trophy. This year's winner was Mr Ian Rawson. The BPS Championship Cup for Class Six was won by Mr Brian Russ.

The theme for this year's show was 'Literature' and although the Specialist Society stands are not obliged to reflect a theme, several societies, including the BPS, decided to take part. I decided to stage our usual hardy ferns with examples of 'Ferns in Literature'. However, the only example I knew was the oft quoted '… we have the receipt of fern seed ... we walk invisible' from Shakespeare's *Henry IV* part 2. Mrs Brenda Smith kindly pointed me in the direction of R.D. Blackmore's *Lorna Doone*, chapter 38, but after my friend Mrs Christine Hobson put out a plea on the Internet for ferns mentioned in literature she was able to prepare a list of over 500 examples. I will refrain from quoting all the six passages I used on the stand, which were from works by Thomas Hardy, Emily Brontë, Walter de la Mare and William Shakespeare. The one that was commented on by several visitors to the stand and moved one lady so much she copied it down, was the one recommended by Brenda Smith from *Lorna Doone*:

"*Along and down the tiny banks, and nodding into one another, even across main channel, hung the brown arcade of ferns; some with gold tongues languishing; some with countless ear-drops jerking, some with great quilled ribs uprising and long saws aflapping; others cupped, and fanning over with the grace of yielding, even as a hollow fountain spread by winds that have lost their way.*

Deeply each beyond other, pluming, stooping, glancing, glistening, weaving softest pillow lace, coying to the wind and water, when their fleeting image danced, or by which their beauty moved, - God has made no lovelier thing; and only He takes heed of them."

However, I do take exception to the idea that only HE takes heed of them! We do too!

On the Saturday all the society stands were visited by Roy Lancaster. He spent a good deal of time with us expressing his interest in hardy ferns.

I would like to express my thanks to the following members and friends who took the trouble to make long journeys to see the show and spend a few minutes chatting to us on the stand. Mr P. Acock, Mrs R. Baker, Mr B. Russ, Mr P. Lamb, Mrs S. Culpitt and Dr and Mrs T. Piearce. Thanks are also due to Christine Hobson and David Fowler for all their efforts in finding and presenting the 'Ferns in Literature' examples used on the stand. My special thanks to Ann Gill, Ray and Brenda Smith and my partner, Elizabeth Graham, for their valued support.

photo: P.J. Acock

Matt Busby, Ray Smith, Ann Gill & Rita Baker on BPS stand at Southport Flower Show

Next year will be the 75th Southport Flower Show and in celebration next year's show will be over four days, therefore the dates will be the 19th to 22nd August 2004 and we look forward to seeing you there. We are always short of help on the stand so if any members have just a few hours to spare I would be very pleased with any offers of help. If any members are interested in showing ferns at the Southport Show I would be pleased to advise on the pleasures and pitfalls of competitive showing. For a schedule for the show please apply to Southport Show Ltd., Victoria Park, Southport, PR8 2BZ.

(www.southportflowershow.co.uk)

SECRETARIAL NOTES

Please note: *names and contact details of all officers can be found on the inside of the front cover of this* Bulletin.

ANNUAL GENERAL MEETING 2004 – The 101st AGM will take place on Saturday 20th March 2004 in the Mineralogy Seminar Room, The Natural History Museum, London at 2.00 p.m.

COMMITTEE VACANCIES – In accordance with paragraph 3, section 3 of the Society's Constitution, five vacancies will occur due to the retirement of three of the longest serving Committee members and two unfilled vacancies. Nominations are invited from Society members to fill these vacancies at the Annual General Meeting in 2004. The names of the nominees, proposers and seconders, together with a letter from the nominee indicating his/her willingness to serve, should reach the General Secretary before the AGM. **Members with a potential interest in serving as an elected Committee member** and who wish to know more of the duties and responsibilities are invited to contact the Secretary.

SUBSCRIPTIONS 2004 – Members are reminded that subscriptions were due on 1st January 2004 and should be paid to the Membership Secretary. Cheques should be made payable to 'The British Pteridological Society'. Current rates are given inside the front cover of this issue. Payment can be made by **Credit Card** – see renewal form. **Standing Order** forms are printed on the reverse of renewal forms and are also available from the Membership Secretary and the BPS website (www.eBPS.org.uk). Standing Orders may be paid on 1st January or 1st February. In either case, membership is deemed to be from 1st January to 31st December.

Persistent subscription defaulters – Each year the Membership Secretary spends twice as much time on the 200 members who pay late, or not at all, as on the 600 members who pay correctly within the first four months of the year! Members are reminded that according to Clause 11 of the Constitution "*Any member failing to pay his subscription within six calendar months of its becoming due shall be liable to have his name removed from the List of Members of this Society*"! Despite persistent requests from the Membership Secretary, there are also a small number who fail to update their Standing Orders when subscriptions increase. Such members have continued to receive full benefits of membership at the Society's cost. Defaulting members who do not amend their Standing Orders with their bank and are still paying at the old rate shall be notified that they will not receive the *Fern Gazette* until such time as their Standing Orders are updated. Members still paying even earlier rates shall be notified that their name will be removed from the Membership List until such times as Standing Orders are updated or cancelled. Any monies received from old Standing Orders will be treated as a donation.

PUBLICATIONS BY AIRMAIL – Our journals can be sent by airmail to overseas members, provided that they advise the Membership Secretary and pay an additional subscription to cover airmail postage. See inside front cover for rates.

CODES OF SAFETY, CONDUCT AND DECLARATION FORM – All members attending Society field meetings should be aware of the Society's *Safety Code* (see 2000 *Bulletin* 5(5): 275), as well as the *Code of Conduct for the Conservation and Enjoyment of Wild Plants* (see 1999 *Bulletin* 5(4): 199), and are required to sign a Declaration form. Copies of these documents can be obtained from the Meetings Secretary or BPS website.

GREENFIELD FUND – This fund, set up as a memorial to one of our Society's great fern growers, Percy Greenfield, is used to finance approved research projects, helping with the cost of necessary equipment, books and travel expenses. Percy Greenfield's interest leaned very much towards the non-scientific side of our activities and it is felt that he would have wanted this taken into consideration when decisions are made. Workers eligible for university or college grants and similar support are not therefore eligible for help from the fund. Applications will normally be dealt with once a year and should be submitted by 1st November. Anyone wishing to avail themselves of this fund should contact the Hon. General Secretary for further information.

CENTENARY FUND – This fund is used to promote the study of all aspects of pteridophytes – horticultural, scientific and educational, whether by amateurs, students or professional pteridologists. As such its scope is much broader and more flexible than the Greenfield Fund. Applications will normally be dealt with once a year and should be submitted by 1st November. Anyone wishing to avail themselves of this fund should contact the Hon. General Secretary for further information.

SPECIAL INTEREST GROUPS – There are three Special Interest Groups. For further information please send a stamped addressed envelope to the organisers:

Tree-ferns: Prof. A.C. Wardlaw, 92 Drymen Road, Bearsden, Glasgow G61 2SY.
Foreign Hardy Ferns: A.R. (Matt) Busby, 16 Kirby Corner Road, Canley, Coventry CV4 8GD.
Filmy Ferns: S.J. Munyard, 234 Harold Road, Hastings, East Sussex TN35 5NG.

Alternatively the organisers may be contacted by e-mail: Tree-Ferns@eBPS.org.uk, ForeignHardyFerns@eBPS.org.uk, FilmyFerns@eBPS.org.uk.

MEMBERS INFORMATION SERVICE – Members often require information and advice on many aspects of pteridophytes but are reluctant to ask or simply do not know where to obtain help. Queries from members on any aspects of the biology, identification or cultivation of ferns or fern allies should be sent, with three first class stamps, to the Horticultural Information Officer.

READING CIRCLE – The Society operates a reading circle for the *American Fern Journal*, a quarterly publication containing much information for those seriously interested in ferns. The *Fiddlehead Forum*, which publishes many 'ferny' items of interest to the amateur grower, accompanies it. To receive these journals contact the Horticultural Information Officer.

BACK NUMBERS OF JOURNALS – I have been impressed this year when out in the field by the number of times our journals have been seen, either while in use looking for an old site or just as general reading about a previous visit. In Madeira we were rueing the fact that we had not got a particular article with us to help us 'unravel' a couple of tricky ferns. All the journals have something worthwhile within and it is sad that I cannot provide all the back numbers but there are still a few tons stored away in my loft for those preparing to go on field trips, those needing extra help in cultivation and for those armchair pteridologists among us. A mixed pack of six of our journals is available for £6. The Back Numbers Organiser can provide a full list of other journals available. *Pat Acock*

FOREIGN FERN SOCIETY JOURNALS HELD BY THE SOCIETY – The Society exchanges journals with many other fern societies in the world. We have a collection of journals/newsletters from societies in the United States (2), Australia (3), New Zealand, India and the Netherlands. If members would like to browse these, they are welcome to get in touch with the Back Numbers Organiser for a list of our holdings. The journals can then be borrowed for just the cost of postage both ways.

E-MAIL ADDRESSES – Members who would like their e-mail addresses published in future membership address lists and who (1) have a stable e-mail address that is unlikely to change in the immediate future, and (2) keep up-to-date with their e-mail messages, are invited to send their address BY E-MAIL to the Membership Secretary at: Membership@eBPS.org.uk. *Please subsequently notify the Membership Secretary if your e-mail address changes.*

BPS WEBSITE – www.eBPS.org.uk (Hosted by The Natural History Museum.)

E-MAIL LIST & PRIVATE DOCUMENT STORE – Members are reminded that there is an e-mail group or 'list' for BPS members only. Its purpose is for discussion of Society matters of common interest and for communication of updated information; it is not intended as a list to discuss the botany or growing of ferns, for which another list such as *FERNS* would be more appropriate. See the BPS Website under 'Links'. Send a blank e-mail to: BPS-subscribe@yahoogroups.com to subscribe. There is also a document store on this site, which will be used for documents intended only for members and therefore not appropriate for posting on the BPS website, e.g. Booksales list and Merchandise details. So far, few members have subscribed to this service. Contact the BPS Webmaster for further information.

BPS VIDEO 'BRITISH FERNS' – This twenty-five minute video shows most of the native British ferns growing in their natural habitats. It demonstrates the wide variety of size and form to be found in British ferns and the broad range of habitats they colonise. Attention is drawn to key identification characters for each species.

Schering Agriculture and the National Museum of Wales funded the video. It is available for loan to members and interested organisations for £3, to cover handling costs (UK only). For further details write to the General Secretary enclosing a stamped addressed envelope.

BPS FIRST MINUTE BOOK – This historical document containing the Committee Minutes from the inception of the Society in 1891 to 1983 is available in full colour on a CD ROM at £10 per copy, including postage. Place your order through Booksales.

BRITISH WILDLIFE – Concessionary individual subscriptions to *British Wildlife* magazine are available to BPS members.

ROYAL HORTICULTURAL SOCIETY – Our Society is affiliated to the RHS, enabling a limited number of members to enjoy certain privileges in connection with RHS Shows, competitions and services.

PAYMENT OF EXPENSES – Documents setting out the *Rules of Conduct for the Treasurer* (BPS/T/1), the *Rules for Seeking Re-imbursement of Personal Travelling and Administrative Expenses* by officers and members acting on behalf of the Society (BPS/T/2), and the *Authorities for Payment* (BPS/T/3) can be obtained from the Honorary Treasurer on request.

COPYRIGHT – All contributors to the BPS journals and webpage are required to sign an agreement assigning ownership of copyright of the article, photograph etc. to the BPS. This has the aim of safeguarding the contributors' work from unlawful copying and use. It does not stop contributors from using their own work elsewhere provided that they acknowledge the original source of publication.

MERCHANDISE – Do you have a BPS sweatshirt and/or tee-shirt, or one of the polo shirts? These are all dark green with a small BPS logo in yellow. Other items, such as BPS ties and metal badges, ferny greetings cards and mugs, are also for sale. Can't find your order form? Contact the Merchandise Organisers for details. They would also welcome suggestions for new stock.

ROYAL PATRONAGE – We are pleased to announce that HRH The Prince of Wales has agreed to be our patron for another five years.

THE FUTURE OF BOOKSALES – Steve Munyard regretfully needs to relinquish his role as Booksales Organiser, so we are looking for volunteers to take over for 2005. Would you be interested? There is the possibility of splitting management of BPS Special Publications from the sale of other new/second-hand books. Contact Steve to find out what is involved.

ASSISTANCE REQUIRED ON BPS STANDS AT FLOWER SHOWS – The Society needs volunteers to assist at the BBC Gardeners' World Live! and Southport Flower Show. You do not need to be an expert on ferns or fern growing, just prepared to spend a few hours or a day on the stand. Expenses are available and should be negotiated with A.R. Busby in the first instance. Further information is available from the Horticultural Information Officer.

Do you have expertise in the design of display stands or similar skills and would like to help the Society? The Committee has agreed the purchase of display stands for use at Flower Shows and other events and is seeking help with their design. If you have that expertise and are willing to help, please contact A.R. Busby, the Horticultural Information Officer.

DESTINATION OF PTERIDOPHYTE RECORDS – Members are reminded that records of ferns and fern allies in the wild should be sent to the appropriate Botanical Society of the British Isles (BSBI) Vice-County recorders, whose addresses are available from the BSBI website or BSBI yearbook, which is available to BSBI members. For those without access to the Internet or yearbook, records may be sent to the Conservation Officer who will forward them to the BSBI. These records are stored centrally at the Biological Records Centre, and can be accessed by the BPS.

NURSERY ADVERTISEMENTS – Members with nurseries that offer ferns are reminded that they may place an advertisement in the *Bulletin*, *Pteridologist* and on the website, free of charge, in return for the inclusion of a note about the Society in their catalogues. A suitable form of words is available from the Secretary. The Website Editor can add a suitable image of a plant or the nursery against the nursery's details, if it was wanted. The leaflet *Where to see ferns* is soon to be revised. If members wish their nursery to be included, please contact the Hon. Gen. Secretary.

THE HARDY FERN FOUNDATION – The Hardy Fern Foundation was founded in 1989 to establish a comprehensive collection of the world's hardy ferns for display, testing, evaluation, public education and introduction to the gardening and horticultural community. Many rare and unusual species, hybrids and varieties are being propagated from spores and tested in selected environments for their different degrees of hardiness and ornamental garden value. Membership costs just $20 for regular members or $10 for students. Members receive a first-rate introductory pack, a quarterly journal and access to their spore exchange. We are proposing a reciprocal arrangement to make payment easier. Those wishing to join or renew their subscription for 2004 should contact Pat Acock, 13 Star Lane, St Mary Cray, Kent BR5 3LJ as soon as possible after reading this notice and will be informed of the current membership rate in pounds. The contact in the USA is Michelle Bundy, 16038 46th Ave, South, Tukwila, WA 98188 USA.

AMERICAN FERN SOCIETY – The AFS has had a reciprocal payment arrangement with the BPS for many years through the Membership Secretary. See AFS advert on p. 114.

ANNUAL GENERAL MEETING 2003

MINUTES of the 100th Annual General Meeting of the British Pteridological Society held at The Natural History Museum, London, on Saturday 22nd March 2003 at 14.15 hours.

IN THE CHAIR: The President, Prof A.C. Wardlaw.

PRESENT: Mr R.G. Ackers, Mr P.J. Acock, Mr M.A. & Mrs L.C. Baggott, Mr A.R. Busby, Miss J.M. Camus, Mr S.E. Czeladzinski, Mr R. Dadd, Mr A.J. Dickman, Mr C.R. & Mrs N. Fraser-Jenkins, Dr Y.C. Golding, Dr N.J. Hards, Dr M. Hayward, Mrs R. Hibbs, Mr K. Hill, Mr G.K. Hoare, Miss J.M. Ide, Ms E. Knox-Thomas, Mr A. Leonard, Ms M.A. MacBeth, Mr A Monaghan, Miss C.M. Mullins, Mr A.H. Ogden, Miss A.M. Paul, Mr A.C. Pigott, Prof. C.E. Polkey, Mr T. Pyner, Mr P.H. Ripley, Dr F.J. Rumsey, Mr B.D. Smith, Mr F.A. Strang, Mr A.D. & Mrs M. Urquhart, Dr T.G. Walker, Mr L.H. Winning, Mr B. Wright.

Item 1 – APOLOGIES FOR ABSENCE: Mr J.H. Bouckley, Mr R.J. Cooke, Dr A.F. Dyer, Dr M. Gibby, Mr M.L. Grant, Mr L. Kirkham, Dr S.D. Martinelli, Dr J.W. Merryweather, Mr M.H. Rickard, Mrs G. Smith, Mr R.W. Sykes.

Item 2 – APPROVAL OF MINUTES: The Minutes of the 99th Annual General Meeting held on Saturday 15th March 2002, and published in the 2002 *Bulletin* (Vol. 6, no. 1) were approved (proposed by A.R. Busby, seconded by R.G. Ackers) and signed by the Chairman.

(Note: Owing to the late publication of the *Bulletin* the Minutes of the AGM 2002 had only been seen in advance by the Committee but copies were available on the day to members attending the AGM. The Minutes published in the *Bulletin* and approved at this meeting were a slightly shortened version of the Minutes as recorded in the Minute Book.)

Item 3 – MATTERS ARISING: None.

Item 4 – REPORT OF THE HONORARY GENERAL SECRETARY (J.M. Ide):

As the Society celebrates its one hundred and twelfth year this year you may be asking, "Where did the other 12 AGMs go?" In 1917 annual meetings were suspended after the death of C.T. Druery, who was Secretary at the time and because of the First World War, being resumed in 1920. Then, in 1940, the Society went into abeyance during the Second World War, with Annual General Meetings being resumed in 1947.

In the early years the Society's annual meeting was the only meeting in the year when "*the business affairs of the Society were transacted, fern hunts were organised and talks given by the more gifted members*" (Dyce 1991). The form of the meeting has changed several times over the years, but as the activities and interests of the Society increased they became the more formal AGMs of today, usually sandwiched between more interesting indoor activities.

(Ref.: Dyce, J.W., 1991 'The British Pteridological Society – The First One Hundred Years', in *The History of British Pteridology*, Ed. J.M. Camus, BPS Special Publication No.4.)

CHARITY STATUS: We made it! After six years and a great deal of hard work the Society officially became a registered charity on 11 June 2002!

A number of people contributed to the work that eventually resulted in our registration. In particular we should thank B.A. Thomas for providing the initial impetus to begin the pursuit of charity status, A.C. Wardlaw for his work in investigating the answers to a number of queries that arose in the initial stages of the Committee's discussions, and R.W. Sykes for the preparation of the application form. After the application had been

submitted it fell to my lot to draft the changes to the Constitution that the Charity Commissioners required, and to organise the procedures to ratify them.

GIFT AID: One advantage of being a charity is that the Society can boost its income through claiming Gift Aid on members' subscriptions, and you should all have discovered a Gift Aid form in your mailing of documents at the beginning of the year. I can assure you that the Committee is not short of ideas on how to spend it!

GRANTS: A second advantage is that it should now be possible for the Society to tap into sources of grants and the Committee recently deputed R.W. Sykes to investigate possible sources and the application procedures for such as the Heritage and Lottery funds.

INSURANCE: The Committee continues to review the Society's organisation and activities. Insurance was already part of the on-going review, but once the Society became a charity it was imperative that investigations should be completed as soon as possible and decisions made.

On becoming a charity, every member of the Committee became a trustee with a number of responsibilities, not least of which is to see that the Society is neither negligent with its money nor careless of the safety of others or of property, both of members and third parties. In the event of accidents, damage to property, fraud or defamation, the Society must be able to show that it has taken all possible measures to avoid them. If the Society was sued and found to be negligent in the way it conducted any of its affairs, any damages against the Society could ruin it financially and the trustees could become liable, even to the forfeiture of their own property. Although the Society, since 2000, has had an insurance policy to cover third party liability, the Committee had a number of concerns, not least of which was trustee liability. The Committee, therefore, accepted R.G. Ackers' offer to investigate insurance and review the ways in which the Society tries to reduce the risk of accidents to members and their guests, and damage to property during meetings. As a result of a considerable amount of work, for which we must thank him warmly, the Committee is now satisfied that we have appropriate insurance cover, but will regularly review the position and constantly be open to situations that may give cause for change.

SPECIAL INTEREST GROUPS: When the Special Interest Groups were first set up around 1992, it was expected that each group convenor would prepare and distribute an annual newsletter to members of the group. A.C. Wardlaw reviewed the Groups and found that the other convenors, like himself as convenor of the Tree-Fern SIG, were finding it difficult to elicit articles from members and were effectively writing the newsletters themselves. This was putting a considerable burden on them. A.C. Wardlaw suggested, therefore, that the activities of these groups might take alternative forms, and as a result the Meetings Subcommittee was asked to arrange, as part of the national programme, a meeting each November based on the area of interest of one Special Interest Group, running on a two to three year cycle; these would, of course, be open to other interested members of the Society. It was also suggested that convenors might solicit lists of ferns grown by members of their groups and these could be published in *Pteridologist*. With these alternative activities there would be no expectation of an annual newsletter, but the idea of Special Interest Groups would be preserved. The meetings would also serve to extend the Society's contribution to its educational aims. Already we see these alternative activities manifested in this year's meetings programme with a Tree-Fern Mini-Symposium to be held at Kew, and in the publication of the Tree-Fern Newsletter in the latest issue of *Pteridologist*.

ARCHIVES: After one hundred and twelve years the Society's archive material is now considerable. With no record of exactly how much material there is or where it is stored, the Committee has been anxious about the inaccessibility and vulnerability of this very valuable

asset. At last I am able to report that some positive movement is taking place, but, not wanting to steel his thunder, I will leave any further word to the Archivist, A.R. Busby.

HONORARY MEMBERSHIP: In celebration of his 70th birthday and for his contributions to the Society and to fern taxonomy, the Society conferred Honorary Membership on A.C. Jermy at last year's AGM at Ness Botanic Garden, South Wirral. In the evening celebrations continued with a dinner in his honour after which diners enjoyed the skills of James Merryweather on several instruments from his collection of bagpipes.

AFFILIATE SOCIETIES: The Society does not act in isolation. It has been a member of the *Royal Horticultural Society* for very many years now, and we have had a representative, since its inception a number of years ago, on *PlantLife Link*, the organisation that liaises on behalf of the individual botanical societies of the British Isles with the plant conservation charity, *PlantLife*. In 2002 we were invited to have a representative on *PlantLife Link Scotland*, a new similar group with a particular concern for Scotland's flora.

Towards the end of 2001 but reported for the first time in the Society's minutes in 2002, the Society had a representative at the first *Annual Conference for Society Recorders* held by the Biological Records Centre, and this will be an ongoing commitment.

In October the Committee took the decision to join the *National Council for the Conservation of Plants and Gardens* (the NCCPG) (though we actually joined in 2003), as it was felt that the Society should seek to improve its relationship with the NCCPG and be pro-active in encouraging members to create National Collections of ferns.

Finally, we have registered our interest in the proposed educational activities of the *National Biodiversity Network* (NBN) by completing an extensive questionnaire sent to the Society. (The National Biodiversity Network aims to provide a central Internet access point for all biological records from all sources, which can be accessed by anyone.)

Our affiliation to these different organisations is one means by which the Society fulfils its stated aim of promoting the cultivation, study and conservation of ferns and fern allies.

(For completeness, perhaps it should be noted here that the Society is also a member of the *National Federation of Plant Societies*, which was set up a few years ago to provide constructive support to the various plant societies in the United Kingdom, be they botanical societies with an interest primarily in wild plants, or groups with an interest in particular cultivated species.)

DEATH OF MEMBERS: It is always with deep sadness that we report the death of members, but 2002 saw the loss of five members of long-standing, who, in very diverse ways, had made valuable contributions to pteridology in the cultivation of ferns or the study of their biology. They were John Bond and John Mashiter, both expert fern growers, Hugh Corley and Betty Molesworth-Allen, fern taxonomists, and Peter Corbin, whose claim to fame was his discovery of a true wild *Asplenium scolopendrium* 'Crispum'. (See Obituaries, *Bulletin* 2002, Vol.6, Number 1, pages 78-85.)

THANKS: I would like to finish my report by saying thank you to several people.

If it had not been for his considerable personal determination to ensure the publication of the *Fern Gazette* and *Pteridologist*, these journals would not have been published in 2002. Alastair Wardlaw devoted a great deal of his time in searching for an editor for *Pteridologist* and in personally preparing Part 5 of Volume 16 of the *Fern Gazette* for publication. (He is also responsible for the bumper three-part issue of the *Gazette*, which will contain the papers presented at the Symposium in 2001, to be published very shortly, which will bring the due issues of the *Gazette* up-to-date.) The difficulty continues of finding editors for our journals and members willing to help, even in small ways, with the

publication process of both the journals and Special Publications. A very pro-active President, Alastair deserves our admiration for taking on a second time-consuming position, that of Acting Chairman of the Publications Subcommittee. The Society owes him a great debt of gratitude, and on behalf of the Committee and the membership of the Society I would like to record our thanks to him for all his hard work.

My own special thanks go to Alastair for being so supportive and gentle with me in my present circumstances, which do not always enable me to be as efficient or as supportive of him as I would like, and to Alison Paul for keeping me on the straight and narrow by reminding me of things I have forgotten, not taken into account, or just plain got wrong! Finally, I should like to thank the Committee for being very forbearing with me when I am unable to get documents out for meetings as early as I would like and they would wish. To you all, thank you very much indeed.

R.G. Ackers commented that the Meetings Subcommittee was already reaping an advantage of being a charity. The normal charge for a room at the National Botanic Garden of Wales, where next year's AGM is to be held, is £360, but the Society will be charged £60 because of its charity status. T.G. Walker noted that another Society of a similar size to the BPS and of which he is a member, has 75% of its membership Gift Aiding their subscriptions. This resulted in a considerable boost to that Society's annual income.

The Secretary's report was approved, proposed by A.M. Paul, seconded by N.J. Hards.

Item 5 – REPORT OF THE HONORARY TREASURER (A. Leonard): The Treasurer presented the unaudited accounts for the year ending 31st December 2002. He explained that the accounts had yet to be finalised. Traditionally, the cost of the *Bulletin* was charged to the year on which it was reporting although the invoice was usually received and paid in the following year. The figure in the unaudited accounts will, therefore, probably be changed. Income exceeded expenditure by approximately £3,000, which was about average over recent years. He was pleased to report that the accounts were healthy.

In response to a question, the Treasurer stated that the value of the two computers noted in item 3 of the notes accompanying the accounts were the actual prices paid for each of them.

The accounts were approved, subject to auditing, proposed by S.E. Czeladzinski, seconded by F.J. Rumsey. (For accounts see page 169.)

Item 6 – REPORT OF THE MEMBERSHIP SECRETARY (M.S. Porter): Despite a rise in subscription rates and unavoidable delays in the publication of the Society's journals, membership numbers held up well, although there was a small decline. Some members resigned, feeling that twenty pounds was too much to pay, others became 'Optional' members, thus reducing their payments to sixteen pounds, but forgoing the *Fern Gaze*tte, and some said they would resign at the end of the year – although not all have carried out this threat! Thus, at the end of 2002 the membership total stood at 778, 23 down on 2001. A breakdown of this total shows that there were 33 Complimentary and Honorary Members, 52 Family Members, 19 Student Members, 86 Subscribers and 588 'Ordinary' Members. Interestingly we have practically doubled our number of Student Members; 19 young people with a keen eye for good value.

During 2002, 76 new members joined the Society, the same number as in 2001 and very much in line with most previous years. Against these have to be set the losses: the death of five valued members of the Society, the resignation of 37 members, a figure that is substantially higher than normal and, as mentioned before, is largely accounted for by the rise in subscription rates, and finally, 57 members were deemed to have lapsed, since they failed to pay their subscription for the year despite one general and two personal reminders.

Although membership has dropped below 800, the reason for the fall is obvious and we can be confident that within a year or two numbers will be made up. Following a rise in subscription rates most societies experience a fall in numbers but they are quickly made good in the ensuing years. The number of new members has not declined, and this should perhaps be seen as the key factor in that process.

Item 7 – REPORT OF THE CONSERVATION OFFICER AND RECORDER (R.J. Cooke): The most noteworthy event this year in botanical circles was the long awaited publication of *The New Atlas of the British and Irish Flora*. This monumental tome (nearly 1,000 pages plus a CD, and very heavy), published by the Botanical Society of the British Isles, is the culmination of a vast amount of recording, including that of BPS members. It reflects well on the BPS that members were able to contribute both records and species accounts. The Atlas contains distribution maps and brief species accounts, and also includes for the first time a separate distribution map for the gametophyte of Killarney fern and many non-native species. Flicking through the fern maps reveals a number of trends, including the contraction of the range of clubmosses to the north-west, the general decline in distribution of marsh fern and other species susceptible to intensive agriculture, and the widespread distribution of the non-native *Azolla*. If you have not yet seen the Atlas I would recommend it, although perhaps to consult rather than to purchase.

Inevitably, the first thing that one does with an atlas is to check that dots exist where you know the species to occur. Usually it becomes quickly obvious that there are some unexplained gaps. Therefore the BPS is likely to instigate some targeted recording of specific species over the next couple of years to try and plug these gaps. We will then be able to publish updated maps, in much the same way as we did in 1978 with the (old) fern atlas. More on this to follow once the Committee has endorsed the proposal.

The Atlas, of course, will stimulate much recording and discussion and one of our greatest challenges is keeping data freely and readily available. The National Biodiversity Network (NBN) aims to help this process, by linking datasets and information through a 'gateway' on the Internet. It is early days yet but in due course I hope that the BPS will be able to play its full role in this initiative. More information can be found on the NBN website (nbn.org.uk); its stated objectives are to:

- Bring together information about biodiversity from a range of different sources.
- Check that this information is reliable, properly documented and safely stored.
- Create links between organisations and their different sets of information.
- Prepare dictionaries of names to help people cope with regional differences in species names.
- Enable anyone to find out about the UK's wildlife, locally and nationally.
- Develop projects to make the wealth of information available for educational purposes.
- Encourage people to participate in the network, so that knowledge and understanding of our natural heritage continues to grow in the future.

In reply to a question from T.G. Walker, N.J. Hards commented that localities of endangered species were safeguarded to the extent that only the general area in which an endangered species was present was given and not the details of the precise locality. Some people still had qualms about even this level of information being available.

R.G. Ackers asked if a pteridophyte subset of the new Atlas was likely to be published, as suggested in the Minutes of last year's AGM? A.C. Pigott replied that there was a verbal agreement with the Botanical Society of the British Isles that the BPS could have access to the data. However, the BSBI might be uncomfortable with a straight lift from the Atlas. He felt that the BPS should aim to do something extra, something better, with the data.

Item 8 – SUBCOMMITTEE (Permanent) REPORTS:

8.1 – MEETINGS SUBCOMMITTEE (P.J. Acock): I suppose it is because we live in such prosperous times that we are able to have such a rich and challenging meetings programme. Who among our forbears would have guessed that the Fern Society would have been exploring for ferns in Chile in February, eating ice-cream and celebrating Clive Jermy's 70th Birthday in the Wirral on the occasion of our AGM, putting on an excellent mini-symposium in Edinburgh during the World Cup or clambering around Tenerife during December. As well as this we fitted in a day trip to Scotney Castle and Sissinghurst; were able to fit in our postponed field meeting to the Lakes in July; and ran an *Equisetum* Workshop at Bangor and a field meeting to Teesdale. It takes your breath away just thinking about it.

We have seen a wealth of new attendees and fellowship has grown among a number of members. We have had members joining us from across 'The Pond' and from the BSBI. We had 28 attending for one of the days at Bangor!

To put on all these meetings takes a great deal of effort and it is my privilege and pleasure to give a vote of thanks to all those involved in any way in the planning, preparation and execution of this great year. We must especially thank those who front the meetings, who come up with the ideas and plan them, but we must also thank those who offer their homes for hospitality, those who prepare rooms, sit on doors, make the tea and help in any number of little ways that make the meetings pass by seamlessly.

The regional groups continue to flourish and are an excellent way of recruiting and retaining the membership's interest at the local level. They are as diverse as they are in number. To start one is not difficult because they can be what anyone wants them to be. In East Anglia and the South East we had our second joint meeting and this has proved to be an excellent way of sharing ideas, interest and friendship.

The Meetings Subcommittee would also like to thank all those who attended and helped to make this year's meetings a real joy.

8.2 – PUBLICATIONS SUBCOMMITTEE (Prof. A.C. Wardlaw): Because of the dispersed nature of its membership, the Publications Subcommittee did not meet during the past year. However, the members were in communal communication by e-mail, and an e-Publications Subcommittee had numerous exchanges of correspondence. The President served as Acting Chairman pending other arrangements.

Meanwhile the Society overcame the difficulties encountered 18 months ago when both *Pteridologist* and *The Fern Gazette* were without Editors and had none in prospect. The future of publication activities by the Society potentially looks bright, with all the new electronic possibilities for storing and disseminating information. Thus we have the printed journals and leaflets, the special publications, the capability of copying large archival texts onto CD, and our website. However, to exploit these opportunities will require more volunteers with the necessary skills and availability. It would therefore be good if all computer-literate or artistically-inclined members, or writers and proof-readers etc. within the Society were to help from time to time with a tour of duty on these activities.

8.2.1 – *BULLETIN*: At the time of writing, the 2002 issue of the *Bulletin* is in the final stages of preparation, the delay being caused by the large size of this Part combined with the introduction of new technology. It contains the usual range of Society News. Miss A.M. Paul continues the expert and dedicated service that she has delivered to the Society in this role for many years now.

8.2.2 – *THE FERN GAZETTE*: The 2002 issue will be of exceptional size – 230 pages and comprise Parts 6, 7 & 8 of Volume 16. It contains the Proceedings of the 2001 Guildford Symposium on *Fern Flora Worldwide: Threats and Responses*. It should be published in March 2003. This special volume has been edited by Dr A.F. Dyer, Dr E. Sheffield and Prof. A.C. Wardlaw and is dedicated to Clive Jermy on the occasion of his 70th birthday. Meanwhile, Dr M. Gibby became Chief Editor of the journal in November 2002 and has mainstream papers being processed for Volume 17, Part 1 to be issued in 2003.

8.2.3 – *PTERIDOLOGIST*: A new-look *Pteridologist* journal was produced at A4 size and full colour. The new Editor, Dr J.W. Merryweather, is to be congratulated for his initiative and designer talents in this very attractive product. By previous arrangement, the Tree-Fern Newsletter (No. 8) was included as a feature of the magazine. As always, the Editor is keen to receive articles and illustrations on any aspect of ferns and their allies.

8.2.4 – *WORLDWIDE WEB SITE*: Mr A. C. Pigott continued to manage the Society's site on the Worldwide Web and is always on the lookout for new material. Members are referred to his article published in a previous *Bulletin* (5(5): 276. 2000).

8.2.5 – *OTHER PUBLICATIONS AND SPECIAL PUBLICATIONS*:

8.2.5.1 – *Symposium Proceedings*: See above at 8.2.2.

8.2.5.2 – *BPS Minute Book CD*: (BPS Special Publication No. 6). As previously reported, the Society's most valuable archive, the 630-page Minute Book, was scanned in colour and copied onto CD in Adobe PDF format by Mr B. Wright (case design by Mrs R. Hibbs). This unique product is now on offer through BPS Booksales. Further particulars may be found on the Society's website and in *Pteridologist* 4(1): 28.

8.2.5.3 – *Index for the Bulletin*: Mr J. Crowe completed a draft Index to volumes 1-4 of the *Bulletin* (1973-1995). It is hoped that an index to volumes 1-5 will be published during the next year.

8.2.5.4 – *Index for Pteridologist*: Mr M. Searle is completing the compilation of an Index for the last volume (Vol. 3) of *Pteridologist*, and will soon start indexing Volumes 1 and 2. It is planned to issue the Indexes for the three volumes simultaneously but under separate covers. They will provide invaluable access to information on the wide range of pteridological subjects published in this magazine between 1984 and 2001.

***Discussion*:** At the end of the report, A.C. Pigott commented that the website had few of the restrictions that paper journals had, and articles with a minority interest or that were too large for a journal could easily be published on the website. C.R. Fraser-Jenkins asked if hard copies would be available for articles submitted to the website? A.C. Pigott replied that there was no automatic production of hard copy for items published on the web, but if the nature of the material was such that the author required the formality of publication then the necessary procedures would have to be gone through, such as the lodging of copies with the appropriate organisations. This could be done. A.C. Wardlaw commented further that it would be possible to make CD copies available on request. The BPS needs to be as imaginative as possible in the ways in which it disseminates material.

8.3 – FERN VARIETIES NOMENCLATURE SUBCOMMITTEE: No report.

Item 9 – SUBCOMMITTEE (ad hoc) REPORTS:

9.1 – FERN ATLAS SUBCOMMITTEE: No report.

Item 10 – COMMITTEE APPOINTED OFFICERS AND MANAGERS:

10.1 – ARCHIVIST (A.R. Busby): This is probably the first time the Society Archivist has been able to report any real progress on the development of the Society's archives to an

Annual General Meeting. Since the formation of the Society in 1891, it has accumulated a large quantity of pictures, letters, articles, books and items of memorabilia. Since then most of it has been stored in very poor conditions, usually in the attics or box-rooms of members. For some time the Committee had discussed how it might all be brought together under one roof, so that the appointed archivist might be given the chance to assess and catalogue the contents. During 2002 the Committee agreed to rent commercial storage space and last October I managed to obtain premises near to my home in Coventry.

Having now had the opportunity to begin collating and assessing the contents of the Society's archive, I am beginning to appreciate its contents and estimate the work ahead. The task is huge and at this stage I have no clear idea of how much other material is in the hands of other members. If any members feel that they have items that they would like to donate to the Society's archive such as photographs, letters, press items or any fern memorabilia, would they kindly contact me with the details first so that I am not overwhelmed by members' generosity. I look forward to reporting further on this matter at the next Annual General Meeting.

10.2 – BOOKSALES (S.J. Munyard): Booksales continued to be used regularly by members at meetings and frequently by postal requests. It continues to be difficult to obtain good second-hand material but in the last four months a number of titles were purchased on the Isle of Wight and in Suffolk. I will continue to search for these items along with any good new material that becomes available.

10.3 – MERCHANDISE (B.D. & G. Smith): Last year was our first full year running the BPS Merchandising having taken over from Mick and Linda Craddock's capable hands in June 2001.

For merchandise sales things were slow during 2002, with very few orders coming in. There were two main reasons for this. One, the merchandise list did not go out with the members' mailing at the beginning of 2002. The second was that we did not have a large gathering like the Symposium, which had given sales a big boost in 2001. The turnover for 2002 (about £200) reflects this, being much less than in 2001 (about £700).

However, we have been trying to improve matters for the future. The merchandise list *did* go out with the early 2003 members' mailing, and there has been a good in-flow of orders since then. More importantly, we have been investigating new items which we and the Committee feel would interest members and are able to launch at this meeting a new BPS bone china mug, which features a lovely *Blechnum penna-marina* designed by Anne Wright and available at £4.50 each. We also have some attractive greetings cards again featuring more of Anne's delightful ferns, and we are grateful to her for producing them for the BPS to sell.

Existing stocks of a number of items have been dwindling and these will gradually be replaced. As an example, there are now polo and sweatshirts bearing an attractive *embroidered* BPS logo. The screen print ones are still for sale but in a limited number of sizes, and are a little cheaper than the embroidered ones. Similarly, there are new car stickers which the manufacturer assures us are a lot more durable than the old (now exhausted) stock. Still in stock in abundance are boxes and boxes of BPS postcards and notelets. However, a lesson can be learnt here about over-purchasing as many are now in a poor state and will have to be written off.

As for the future, we are looking into BPS pens, serviettes and tea towels, and we may even be producing a BPS calendar, but, more of that next year.

Finally, if anyone has any ideas for items of a 'ferny' nature that they would like to see, please do let us know.

A.C. Wardlaw asked how remainder stock was valued? Although no direct reply was forthcoming, A.C. Pigott responded that the postcards and notelets, purchased by him, had already paid for themselves when management of Merchandising was handed over to the previous managers, M. and L. Craddock, over six years ago. It was suggested that advertisements for merchandise could be placed on the website and in P*teridologist*. The latter could be a permanent feature.

10.4 – PLANT EXCHANGE (R.G. Ackers): Following responses from the Plant Exchange insert in last November's *Pteridologist* mailing, a new List was prepared and distributed mid-January 2003 to 14 postal requesters and 20 e-mail requesters. An updated version of the List was e-mailed at the end of January. This version contained 61 'offered' and 56 'wanted' taxa from a total of 22 scheme participants.

Four new ideas were introduced:

- The addition, where known, of the USDA Hardiness Zone for the plants offered.
- The option of having plants collected and/or posted.
- The introduction of plant 'wants' (up to a maximum of six plants per participant).
- The supply of List updates to e-mail participants.

10.5 – SPORE EXCHANGE (B. & A. Wright): The exchange continued to be a popular service offered to members, with 149 requests being received and processed, resulting in the sending out of 2,473 packets of spores. Of these, 110 requests were from UK members (England 89, Scotland 11, Wales 10) and 39 from overseas. This reaffirms the international nature of our exchange. The overseas requests were from Austria (1), Belgium (1) Czech Republic (1), Denmark (2), Eire (3), Estonia (2), France (2), Germany (8), Japan (1), Luxembourg (1), Mauritius (1), Netherlands (4), Norway (1), Poland (1), Sri Lanka (2), Switzerland (1), USA (7). Three requests for spores were processed by A.R. Busby.

Out of the 614 taxa on the 2002 list we had requests for 561 of them. Because we are no longer discarding spores after three years, we expect a steady increase in the number of species on the list. There is obviously a balance between taxa that 'run out' and 'new taxa' donated each year, but we still seem to be adding steadily to the list.

During 2002 we received donations from 29 donors sending in 274 different taxa to top up the spore bank. Without donations there would not be an exchange. We are grateful for all the spores we receive and would like to thank those requesting them for their patience in the early weeks of the distribution.

In 2002 we suffered one of the aftershocks of the September 11th terrorist attack in America. The United States government imposed strict import regulations requiring that we produce a phytosanitary certificate for every consignment of spores going into the US. This added to our workload. We tried to group together these requests as we have to call out an inspector from DEFRA each time we send out a consignment. So far DEFRA have not charged for this service, however, we have been advised that if a charge is to be made it would be in the order of £40 per consignment. (DEFRA – Department for the Environment, Food and Rural Affairs)

The only other problem we had during the year was when we tried to cash in some of the International Reply Coupons sent in by overseas members. Apparently, these are not valid for redemption if they have not been stamped by the issuing post office. This meant that we had to throw out more than 25 coupons because they had not been stamped. In this country they are worth 44p for the return postage. This is a significant loss and we hope that overseas members will, in future, ensure that their coupons are correctly stamped by their issuing post office.

So far we have had no adverse comments about our use of small foil packets to contain the spores. We hope this means that it is an acceptable method of packaging and not that people are too apathetic to complain. It may seem a fiddly way of packaging, but we find it advantageous in the long run as we can economise on glassine envelopes. It also enables us to make some of our smaller donations of spores stretch further by putting in smaller quantities than we would have normally put into a glassine envelope alone. We did get a number of adverse comments about spores getting trapped in the folds of the glassine envelopes that we used to use.

One of the perennial problems we face is how to provide a 'level playing field' for our overseas members. Clearly they do not receive their spore lists at the same time as UK members and also there is a delay in their replies. This is why we do not start the exchange immediately we receive our first requests from UK members. We try to anticipate the turnaround period for various overseas members and advance their requests forwards by three or four days to give them a fair chance of obtaining the spores they want. We also continue to favour donors by advancing them to the front of the box regardless of when their request arrives. A good incentive for being a donor!

With the increase in the use of the Internet and e-mail, we are coming under increasing pressure to accept requests via this method. This poses the problem of how we get the money back for the expenditure of stamps and envelopes, etc. This problem will need to be addressed during this coming season. Unfortunately, although we can receive requests via e-mail we have yet to find a way to send out the spores as an attachment!

10.6 – HORTICULTURAL INFORMATION OFFICER (A.R. Busby): Four enquiries had been received during the year, three of which were from non-members. One enquiry concerned glazed cases and A.R. Busby was able to direct the enquirer to a supplier; the other enquiries concerned the cultivation of ferns.

The above reports, items 6 to 10.6, were accepted *en bloc*, proposed by P.H. Ripley and seconded by C.R. Fraser-Jenkins.

Item 11 – ELECTION OF OFFICERS AND COMMITTEE MEMBERS:

ELECTION OF OFFICERS AND COMMITTEE MEMBERS: The present officers of the Society were all eligible to stand for re-election and had indicated their willingness to stand. Of the present elected members of the Committee, R.G. Ackers was retiring, being the longest serving member of the Committee (elected 2000), and F.J. Rumsey had agreed to retire, there being four members elected in 2001. It was proposed by N.J. Hards and seconded by Miss J.M. Camus that the officers and those elected members eligible for re-election be elected *en bloc*. The vote was unanimously in favour.

ELECTION OF NEW COMMITTEE MEMBERS: There was one nomination for Committee membership: Dr Yvonne Golding, proposed A.C. Wardlaw, seconded R.G. Ackers. Dr Golding was elected unanimously.

ELECTION OF AUDITORS: The auditors, P.H. Ripley and Mrs K. Munyard, are disqualified as auditors now that the Society is a charity as they are either on the committee or married to a committee member. G.K. Hoare and Dr N.J. Hards, proposed by the Committee, were elected unanimously.

Item 12 – HONORARY MEMBERSHIP: A proposal to award Honorary Membership to C.R. Fraser-Jenkins, supported by a detailed statement setting out his contribution to pteridology, had been made by J.M. Camus and seconded by A.M. Paul. The Committee was delighted to support the proposal and in making the award, the President congratulated him. In reply, C.R. Fraser-Jenkins, now resident in Nepal but currently visiting the UK, said

that he was very happy to receive the award; it meant a great deal to him. He issued an invitation to the Society and its members to visit Nepal, a homely fern garden!

Item 13 – ANY OTHER BUSINESS: The President reported that Miss Rose S. Murphy had been elected a Fellow of the Linnean Society and the Royal Horticultural Society had awarded the Gold Veitch Memorial Medal to Martin H. Rickard. The congratulations of the meeting would be sent to them both.

There being no further formal matters for consideration the Chairman declared the meeting closed at 15.45 hours.

Jennifer M. Ide
Hon. Gen. Secretary

NOTES TO THE ACCOUNTS

1. The accounts reflect the subscriptions actually received in the year.
2. BPS Booksales had assets of £5,712.60 (£5,361.24) at 31.12.2002.
3. The Society also possesses the following assets:
   Back issues of the *Bulletin*, *Fern Gazette* and *Pteridologist* valued at approximately £3,000.
   Merchandise valued at approximately £1,200.
   Booksales has a computer valued at £600 in 2000.
   The Editor of *Pteridologist* has a computer valued at £1,133.99 in 2001.
4. The Society made no grants in 2002.
5. The numbers of copies of publications are shown on either side of the title.

REPORT OF INDEPENDENT EXAMINERS

(*Since the Society is a registered charity with an annual turnover of less than £100,000 no audit is required but a formal examination is carried out in accordance with Charity Commission rules.*)

We report on the accounts of the Trust for the year ending 31st December 2002.

Our Examination was carried out in accordance with the General Directions given by the Charity Commissioners. An examination includes a review of the accounting records kept by the charity and a comparison of the accounts presented with those records. It also includes consideration of any unusual items or disclosures in the accounts, and seeking explanations from the Committee as trustees concerning any such matters. The procedures undertaken do not provide all the evidence that would be required in an audit, and consequently we do not express an audit opinion on the view given by the accounts.

In connection with our examination, no matter has come to our attention:-

1. which gives us reasonable cause to believe that in any material respect the requirements
   - to keep accounting records in accordance with section 41 of the 1993 Act; and
   - to prepare accounts which accord with the accounting records and comply with the accounting requirements of the 1993 Act

have not been met; or

2. to which, in our opinion, attention should be drawn in order to enable a proper understanding of the accounts to be reached.

Dr N.J. Hards & G.K. Hoare
19th September 2003

FINANCIAL STATEMENT AS AT 31 DECEMBER 2002

ORDINARY ACCOUNT

(2001)		INCOME		2002
£12,973.77		Subscriptions		£14,791.26
637.48		Interest		498.10
749.71		Booksales		15.66
0.00		Spore Exchange		0.00
704.60		Merchandise		102.25
55.00		Plant Sale		0.00
21,303.72		Symposium 2001		0.00
£36,424.28		**TOTAL INCOME**		**£15,407.27**
		EXPENSES		
3,241.45		Pteridologist		3,519.73
4,762.08		Fern Gazette		2,308.16
3,990.10		Bulletin		3,497.20
585.25		Printing & Stationery		128.00
1,061.37		Administration & Postage		875.57
47.50		Subscriptions to Societies		55.00
51.37		Plant & Spore Exchanges		50.00
529.62		Meetings		1,147.12
0.00		Merchandise		0.00
18,407.14		Symposium 2001		0.00
749.71		Booksales		0.00
57.84		Special Interest Groups		0.00
0.00		Archive Storage		203.28
£33,483.43		**TOTAL EXPENSES**		**£11,784.06**
2,940.85		Balance (income minus expenses)		3,623.21
10,118.28		Brought forward from previous year		13,059.13
£13,059.13		**Total in Ordinary Account**		**£16,682.34**

CENTENARY FUND

383.44		Interest		247.38
0.00		Grant		0.00
16.00	*172*	World of Ferns	*171*	8.00
6,086.15		Brought forward from previous year		6,485.59
£6,485.59		**Total in Centenary Fund**		**£6,740.97**

GREENFIELD FUND

121.41	Interest	78.25
0.00	Grant	0.00
3.00	Donations	0.00
1,927.01	Brought forward from previous year	2,051.42
£2,051.42	**Total in Greenfield Fund**	**£2,129.67**

PUBLICATIONS ACCOUNT

321.90		Interest		227.11
255.67		Offprints		203.57
39.75	*155*	Fern Names & Their Meanings	*146*	35.10
128.30	*339*	Cultivation & Propagation	*310*	112.00
60.00	*819*	History of British Pteridology	*813*	30.60
39.30	*430*	BPS Abstracts & Papers	*427*	18.00
5,109.38		Brought forward from previous year		5,954.30
£5,954.30		**Total in Publications Account**		**£6,580.68**

AWARDS

HONORARY MEMBERSHIP – C.R. FRASER-JENKINS

At the AGM on 22nd March 2003 Honorary Membership was conferred on Chris Fraser-Jenkins for his services to pteridology.

In the UK, the name Fraser-Jenkins is associated with the *Dryopteris affinis* complex, but Christopher's work with ferns is much wider than this.

At the tender age of nine, Chris started to identify ferns using *The Observer's Book of Ferns* as his botanical bible. When at school at Radley College he met the late Hugh Corley who was already involved in researching the male fern group. It was Hugh who really introduced Chris to the detailed observations needed for fern research – frond shape will only get you so far. Spore-size measurement, pinnule-toothing, details of indusia and scales, and frond texture all became standard tools. Chris continued his pursuit of ferns at the University of Leicester.

Chris started his collecting trips abroad shortly before he left school, going first to Arctic Sweden, then with Martyn Rix to Turkey and Iran, and joined the BPS in 1966. Through the BPS meetings he met Clive Jermy at The Natural History Museum, and hence was fortunate to be awarded a Student Vacationship to study the *Dryopteris villarii* group. Shortly afterwards he was able to join a cytology course run by Prof. I. Manton and John Lovis at Leeds where he met more important British pteridologists – Anne Sleep and Mary Gibby, and got confirmation that he had indeed found the missing diploid ancestor of *D. filix-mas* in the Caucasus.

photo: F.J. Rumsey

Alastair Wardlaw (*right*) presents Christopher Fraser-Jenkins with his Honorary Membership certificate

His long, free-lance career started through contact with Prof. T. Reichstein, a retired Swiss chemist who had won the Nobel prize for his work on vitamin C. Reichstein took up pteridology at the age of 75 and studied the chemistry of *Dryopteris* and *Asplenium* complexes. Reichstein financed many of Chris' collecting trips to obtain *Asplenium* for his work, allowing him to travel round the world looking at *Dryopteris*, *Polystichum* and *Athyrium*.

His work really expanded beyond European ferns when he first visited the Himalayas in 1977 and encountered so many species and species-complexes that he realised he would have to get to grips with all their relatives in China and Japan as well. Mary Gibby was now in post at The Natural History Museum and could help with cytological problems, and Prof. C.-J. Widén at Helsinki, Finland, provided phytochemical analyses. The three worked in a complementary way as a very successful team. Clive Jermy again assisted Chris' career by helping him to get a major fellowship from the Nuffield Foundation in 1979 and two Royal Society exchange visits in 1980 and 1982 with Academia Sinica in China.

Since then he has continued his research with work on floristic projects such as *Flora Iranica* as well as monographic studies on *Dryopteris*, *Polystichum*, *Athyrium* and other genera, collaborating especially with Nepalese and Indian botanists. His publications now number well over seventy and he is the author of over 100 new names or new combinations. Chris has received two honours from the Indian Fern Society: the Prof. S.S. Bir Gold Medal in Pteridology in 1989 and Fellow of the Indian Fern Society in 1999.

Chris has been an assiduous and gifted collector with a remarkable eye for new and critical material, which has forwarded the insight into many ferns, especially in the *Dryopteris* complexes. He is widely acknowledged as a world expert in *Dryopteris*, in fact he is THE world expert in this genus. His publication "*A monograph of* Dryopteris *(Pteridophyta: Dryopteridaceae) in the Indian subcontinent*" may be taken as a good example of his work. This paper is a model for fern taxonomy: it has keys to species, detailed descriptions, cytology, ecology, range, good black and white photographs, lists of material examined and very useful notes for each species. Very few fern botanists have achieved this high standard of presentation beyond the publication of their degree research, but this fine attention to important detail is typical of his work.

His collections now number over 30,000. These specimens are distributed among major herbaria in Europe and Asia but especially at The Natural History Museum and the National Museum of Wales (he first became associated with the latter in his childhood). His field experience of Asian pteridophytes is second to none. During the course of his fieldwork, especially in India, he has helped numerous Indian fern botanists with identifications, contacts and literature. He now has informal fern students in Nepal, Bhutan and Bangladesh. Gardens of many fern-lovers in the UK have been enriched with plants as a result of Chris' work. Major collections were held in, for example, Chelsea Physic Garden, Oxford Botanic Garden and in private gardens such as that of his late father, Derek, at Bridgend where he held the National Collection of *Dryopteris* – now in Martin Rickard's garden.

For the last ten years he has been resident in Nepal. In 2002 Alison Paul enabled Chris to receive a curation bursary from The Natural History Museum that allowed him to return there to identify and study Himalayan ferns. He was able to extend his stay in the UK to attend the 2003 AGM with his wife, Nirmala, and receive his Honorary Membership in person.

Josephine M. Camus

OBITUARIES

RICHARD HENRY ROBERTS 1910 – 2003

Richard Henry (Dick) Roberts, who has died aged 92, was one of the country's leading amateur botanists and a nature conservationist of the highest integrity. His recognition of the botanical interest of the Anglesey fens during the 1950s led directly to their designation as nature reserves and to the establishment of the North Wales Naturalists' Trust (now the North Wales Wildlife Trust) of which he was a proud co-founder and its first General Secretary. In addition he had an international reputation for his taxonomic expertise in *Polypodium*, *Dactylorhiza* (marsh orchids) and *Mimulus* (monkey flower).

Born at Llanllechid, near Bangor, North Wales, in a strongly Welsh speaking community, Dick took an early interest in botany, encouraged no doubt by his mother's knowledge of herbal plants and his upbringing on the family hill farm. However, he received no formal instruction in botany at school or university and after graduation from University College of North Wales, Bangor, he began a lifetime's career as a primary school teacher. His first teaching post was in Sussex, followed by a spell in Evesham where he met and married Bet, who was his loving and supportive wife for 58 years. In 1947 he was appointed to teach in Penmachno, which allowed him to study the mountain flora of Snowdonia, especially the area's ferns. Here he relished the opportunities to study the fine grained distribution patterns of plant species against the wide range of rock types. Finally, in 1955 and now with family, he moved to Bangor where he was a much respected head teacher until his retirement in 1974.

Despite a heavy workload Dick was an active member of both the British Pteridological Society and the Botanical Society of the British Isles (BSBI) for almost 50 years. He was appointed BSBI Vice-County Recorder for Anglesey in 1955, a position he carried forward with undiminished enthusiasm and expertise until 1995. During his stewardship he made a number of significant additions to the island's flora, including *Ophioglossum azoricum*, *Polypodium cambricum* and all the polypody hybrids, *Equisetum* x *font-queri* and *E.* x *litorale*, *Pyrola maritima* subsp. *rotundifolia*, and the marsh orchids *Dactylorhiza traunsteineri* and *D. majalis* subsp. *cambrensis*. As his interest in marsh orchids grew he undertook detailed morphometric studies which together with his keen appreciation of ecological factors gave him a unique field-based insight into this complex. And it was the same with the polypody ferns that he came to understand with great authority, ably distinguishing the cytotypes both in the field and after careful examination at home, regularly preparing sporangia or root tips to view under a microscope on the family's lounge table and thereby make accurate chromosome counts and cell measurements. He wrote a series of papers for *The Fern Gazette* and *Watsonia* clearly describing his findings in these fields and frequently accompanied by his own skilled botanical drawings.

After extensive fieldwork Dick published *The Flowering Plants and Ferns of Anglesey* in 1982, an invaluable guide to the island's plant life. An *Atlas of Flowering Plants and Ferns of Anglesey*, which he published privately in 2002, reveals the detailed extent of his knowledge of the distribution of species, both native and alien.

Despite his commitments to Anglesey, Dick retained a keen and discerning interest in mainland botany, partly as a result of his long friendship with a fellow Caernarfonshire botanist, Evan Roberts of Capel Curig, and made notable contributions to our understanding of *Dryopteris* in Snowdonia. Additionally he contributed in a wider field by collaborating with specialists in plant genera such as *Mimulus*, *Equisetum* and *Asplenium*. As well as

publishing almost 50 scientific articles and papers of his own, Dick has been formerly acknowledged in 20 more. He has been given due recognition in the naming of two taxa *Mimulus* x *robertsii* and *Equisetum* x *robertsii*, the latter a hybrid horsetail discovered on Anglesey in 2002, a fitting tribute to a botanist with a keen eye for hybrids and a deep attachment to the flora of his natal area.

Dick was always happy to share his knowledge and experience, regularly advising university staff and students, professional conservationists and taxonomists, as well as fellow amateur botanists. He acted as a referee for the BSBI for *Polypodium*, *Dactylorhiza* and *Mimulus*, with a worthy reputation for his prompt, informative and courteous responses.

During the 1950s and 1960s Dick became increasingly involved with conservation as he witnessed first hand the changes to the landscape and wildlife of North Wales wrought by farming, forestry and tourism. He teamed up with Bill Lacey, a Senior Lecturer in the Botany Department in the University at Bangor to save a fine wetland in the east of Anglesey known as Cors Goch from becoming a rubbish dump and this action led the two botanists to form the North Wales Naturalists' Trust and a long friendship that was to serve nature conservation well.

Indeed Dick Roberts' association with the University at Bangor developed strongly and in recognition of his botanical scholarship and services to plant conservation he was awarded an Honorary MSc by the University of Wales in 1979. He became an Honorary Member of the BSBI and was awarded the Linnean Society's prestigious HH Bloomer Medal for services to botany and conservation in 1999.

Despite such accolades R.H. Roberts was an intensely modest man who was content to work quietly without acknowledgement. He had wide interests, which included archaeology, Welsh history and poetry, and even Welsh Mountain sheep breeding. Above all he loved his family and to his wife, Bet and their two daughters Pat and Anne and the wider family we extend our condolences.

There is no doubt that in his combined knowledge of the flora, history and environment of North Wales R.H. Roberts was unsurpassed in his lifetime and has continued the fine tradition of Welsh natural historians.

Nigel Brown

(*with grateful thanks to Bet Roberts and Ian Bonner for information and comment*)

GRAHAM STUART THOMAS OBE VMH 1909 – 2003

Graham Thomas was born on the 3rd of April 1909 and died on the 16th of April 2003. Over this long life he made a very significant contribution to gardening in general, with some valuable input into the world of ferns. I well remember being recommended his book *The Modern Florilegium*, published in 1976. In it he gives a very full list of garden ferns together with some useful notes about each. According to *The Modern Florilegium* his favourite fern was *Dryopteris wallichiana*, in fact he considered it one of the most magnificent of all garden plants. Many years later I had the pleasure of meeting Graham several times at the Chelsea Flower Show when he confirmed that he still rated *D. wallichiana* one of the best.

During my stint as Editor of the *BPS Bulletin* I had the good fortune to be able to publish one article by Graham on some evergreen ferns hardy in Britain (1981). Sadly, I believe this was his only contribution to the Society's journals. He joined our Society in 1964 and resigned in 1987, partly due to reducing his society commitments but due partly also to his

dislike of some of the fancy cultivars so much enjoyed by many of us – me included! We laughed about this in later years!

Graham wrote many books and achieved much in the world of horticulture, notably being Gardens Advisor to the National Trust for 19 years. For more details and a fuller obituary please see *The Garden*, Vol. 128, Part 6, page 149.

Martin Rickard

IN MEMORIAM

We were also sorry to learn of the death of the following members:

Mr Brian P. Haskins of Cheshire, who joined the Society in 1982.
Mr William H. Keatley of Devon, who joined the Society in 1993.
Mr Barry Ollerenshaw of Cheshire, who joined the Society in 1999.
Mr R. Martin Riemer of Dusseldorf, Germany, who joined the Society in 1972.
Mrs Antonia Surman-Wells of East Sussex, who joined the Society in 1999.

MEMBERSHIP LIST: ADDITIONS AND AMENDMENTS

NEW MEMBERS

** new members 2003, ** new members 2004, # members rejoined 2002, ## members rejoined 2003*

* Addington, Mrs M., 69 Clarendon Gardens, Ilford, Essex IG1 3JW
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Weedon, Mr G., 8 Cathay Gardens, Dibden, Southampton, Hants. SO45 5TY

MEETINGS PROGRAMME 2004

Meetings Secretary: P.J. Acock
Meetings Subcommittee: R.G. Ackers, N.J. Hards, J.M. Ide, A. Leonard, P.H. Ripley

Thurs. 8 - Mon. 19 Jan.	**Overseas Field Meeting – Trinidad, West Indies** Leaders: Yasmin Baksh-Comeau & Graham Ackers
Sat. 20 March	**Spring Meeting & AGM – Natural History Museum, London** Leader: Graham Ackers
Sat. 12 - Sun. 13 June	**Weekend Field Meeting – New Forest, Hampshire** Leader: Andrew Leonard
Fri. 25 - Mon. 28 June	**Long Weekend Field Meeting – Isles of Scilly** Leader: Ian Bennallick
Mon. 12 - Fri. 16 July	***International Pteridophyte Symposium, Edinburgh** Organiser: Mary Gibby *et al.* See www.rbge.org.uk/rbge/web/science/news.jsp
Sat. 17 - Mon. 19 July	**Long Weekend Field Meeting – Glasgow & SW Scotland** Leader: Frank McGavigan
Sat. 31 July - Sun. 1 Aug.	**Weekend Field Meeting – South Shropshire** Leaders: Clive Jermy & Martin Rickard
Thurs. 19 - Sun. 22 Aug.	***Southport Flower Show: BPS Stand** Further Info.: Matt Busby
Sat. 20 Nov.	**Autumn Meeting on Fern Reproduction – Reading University** Leader: Jennifer Ide
28 June - 8 July 2005	**Overseas Field Meeting with Hardy Fern Foundation – Philadelphia, USA** Organiser: John Scott See www.hometown.aol.com/bps2005/myhomepage/index.htm

** Event supported by, but not organised by, the BPS.*

For further details of these and other meetings of interest to members, including information on accommodation, please see the separate Meetings Programme sheet. This can be sent to overseas members on request.

Regional Meetings

For details of additional meetings in the following areas, please contact the regional organisers, enclosing a stamped addressed envelope.

Leeds & District	B. Wright, 130 Prince Rupert Drive, Tockwith, York YO26 7PU e-mail: Leeds@eBPS.org.uk
South-East England	P.H. Ripley, North Lodge, Dene Park Gardens, Shipbourne Road, Tonbridge, Kent TN11 9NS; e-mail: SouthEast@eBPS.org.uk
East Anglia	B.R. Stevenson, Willow Cottage, Cowlinge, Newmarket, Suffolk CB8 9QB e-mail: EastAnglia@eBPS.org.uk
North-West England	Mrs F. Haigh, 56 Church Street, Milnthorpe, Cumbria LA7 7DZ e-mail: NorthWest@eBPS.org.uk
Cornwall	I.J. Bennallick, Lower Polmorla St, Wenn, Bodmin, Cornwall PL30 5PE e-mail: Cornwall@eBPS.org.uk
Scotland	F. McGavigan, 12 Glenbank Avenue, Lenzie, Glasgow G66 5AA e-mail: Scotland@eBPS.org.uk

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